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Address.

THE CHILD AND THE COMMUNITY.*

BY EDWARD O. OTIS, M.D., BOSTON.

THE CONFLICT BETWEEN NATURE AND CIVILIZATION.

NATURE and Civilization often appear to work at cross purposes. Civilization is all the time trying to accomplish the impossible, of having her cake and at the same time eating it. Nature always makes sure that her cake shall be preserved; and she has the advantage of man in that she can *create* as well as *destroy*. She can eat her cake and be sure of getting another. We, in our ignorance, attribute to Nature a kindly, beneficent attitude in dealing with life, while, if we look a little under the surface, we discover that in the consummation of her plans she is relentless, wasteful, and cruel; but she accomplishes her purpose without the peradventure of failure unless we interfere with her.

One of the inexorable laws of Nature is the maintenance of a type of life which has once come into existence, and to be sure of doing this she sacrifices ruthlessly many other lines of the same type.

> "So careful of the type she seems,
> So careless of the single life,
> That I considering everywhere
> Her secret meaning in her deeds
> And finding that of fifty seeds
> She often brings but one to bear."

But she never fails to bring that one to bear.

* Read before the Advisory Council of the National Association for the Study and Prevention of Tuberculosis at Seattle, June 14, 1915.

Maeterlinck, in his fascinating story of the "Life of the Bees," tells us how, after the nuptial flight has taken place and the one male out of thousands has been selected by the queen bee to be her mate, and the future generations have been provided for, the hundreds of other disappointed males are mercilessly massacred by the working female bees.

> "And to serve that single issue
> Lest the generations fail,
> The female of the species
> Is more deadly than the male."

Fabre, in his delightful accounts of insect life, tells of similar tragedies in the life history of other insects.

In the higher animal life, when man does not interfere, Nature shows the same tenacity of purpose in preserving at all hazards the genus though she is prodigal of single lives in doing so.

With man, in primitive life, many children are born; families are large. We see this among the families of immigrants in this country at the present time. In the Colonial days of simple living in New England, marriages were early and there were many children. It is the same among peasant families, for example, and generally among people of primitive habits.

Nature, undisturbed by the artificial conditions of so-called higher civilization, appears to follow, with man, her same general plan for the preservation of the race. She provides lives enough, so that, if many are lost, enough will remain to continue and increase the type,—the race. We see this process of plentiful supply and great loss in the Chinese race, where sixty

per cent. of all babies die before reaching the age of two years, and yet enough are left to maintain and increase the stock.

Civilization, with its so-called culture, appears to contravene this law of Nature to provide enough lives so that, with the loss of many, a sufficient number will survive to continue and increase the stock. The higher we go in Civilization, the fewer the children. Nature says "quantity"; Civilization says "quality",—and loses. We see on every hand the higher types of man decreasing. This is markedly the case at the present time with the old American stock. The old New England families are rapidly dying out. Boston, the ancient centre, one may say, of the pure American race, is now seventy per cent. or more foreign. We cannot, apparently, save the most cultured of our race. The very means we take to produce the intellectually most fit (higher education, careful and prolonged training, refined environment, and all the arts of a higher civilization) appears to defeat its own purpose, by more or less rapidly rendering that higher type incapable of reproducing itself in sufficiently large numbers to maintain and increase its kind. It is a startling and sad fact, but a fact it seems to be.

It is, then, largely to the families of the newer Americans, to the present lower grades of society, that we must look for the future maintenance of our American white population. Our problem is to contravene Nature's law, with regard to man, and see how many of the children in the prolific families of the lower grades of civilization we can save, which Nature, in her prodigality, would allow to be destroyed, permitting only the physically fitted to survive. It is a problem for the community, of the highest economic importance as well as a humanitarian one. As Huxley says: "The influence of that which is ethically best, what we call goodness or virtue, is directed not so much to the survival of the fittest as to the fitting of as many as possible to survive."

EUGENIC MARRIAGE LAWS.

In the first place, the community is beginning to realize that diseased and physically unfit men and women should not be allowed to marry and produce diseased and physically unfit children. In two states, at least, so-called eugenic marriage laws have been enacted. Both for the child's sake and for the sake of the community who have to care for the defectives, such a law seems just and reasonable. It is a significant fact bearing upon this point, that the most important causes of infant mortality in New York City, as stated by Dr. Baker, chief of the Division of Child Hygiene of the Department of Health, in 1913, are the so-called congenital, inherited diseases, the deaths from which diseases occurring during the first month of life, amount to thirty-five per cent. of the total deaths under one year.

CARE OF THE INFANT.

To ensure a healthy child, pre- and post-natal care and training of the prospective mother is essential, and in many communities this is now done in connection with the lying-in hospitals, or, as in Boston, by the Child Hygiene Department of the Board of Health and other private instrumentalities through visiting nurses who instruct the future mothers in personal hygiene, the general care of pregnancy, and in their own and their babies' care after confinement. The Caroline Rest Training School for Mothers, conducted by the New York Association for Improving the Condition of the Poor, is an excellent example of this kind of welfare work.

All communities now recognize the importance of the preservation of infant life, and in all the large cities, at least, there are many agencies at work to accomplish this, some public and others private. Milk stations, with visiting nurses, infant hospitals and dispensaries, welfare stations, departments of child hygiene of city or state boards of health are some of the instrumentalities. In Boston the Milk and Baby Hygiene Association gives care and exercises supervision over a fifth of the baby population of 20,000 up to one year of age. This it does through milk stations or centres where weekly clinics are held with the mothers, and from which nurses go out and visit the homes regularly. In 1914 there were 2007 deaths of babies under one year of age, or 103 per 1000. Of these, sixty per cent. occurred under three months of age.

Although this is the lowest infant mortality of any city in this country except New York, which was ninety-four per 1000 for the same year, yet it is still too wasteful; for, as Dr. Emmons[1] has recently said, "The occupation of being an infant in Boston is more dangerous than being a soldier in the European war." New Zealand leads the world in its low infant mortality, which is fifty-one per 1000, and this remarkable result has been accomplished in large part, says Dr. F. Truby King, through the teaching of mothers pre-natally, post-natally, and later through the milk station.[2]

First and foremost, the mother should be taught the immense importance, for the present and future well-being of her child, of breast feeding, and that no kind of artificial feeding can compare with it.

CLEAN MILK.

When the baby is weaned, the mother, by ocular demonstration, should be shown how to prepare the milk for that purpose, and afforded opportunity for obtaining clean milk, either raw or pasteurized, and this is now generally possible through the milk stations in the cities. Nothing is of more vital importance in the preservation of the life of babies and young children than the protection of the milk supply, their

[1] BOSTON MED. AND SURG. JOUR., April 29, 1915.
[2] Care of Prospective Mothers. *Ibid.*

chief source of food, either by certifying it to be clean, from inspected cows, dairies and wherever milk is sold, or else furnishing it in a pasteurized form.

This duty is now recognized in the sanitary code of most well regulated cities. It has been a long fight in the State of Massachusetts to obtain adequate milk inspection laws. Hardly a Legislature passes that the contest is not waged in behalf of clean and safe milk; and it was only a few weeks ago that an efficient milk protection law was finally passed, but which was unfortunately vetoed by the Governor.

The public still needs further education in regard to this surpassing means of conserving infant life. Gastro-intestinal diseases are among the chief causes, as we know, of the high death rate of infants, and they are to a great extent preventable by the use of clean milk. Moreover, the price of safe milk should be within the means of those who can pay but a small sum for it, and it should be furnished free to the very poor, either by the community or through private instrumentality. It must always be insisted upon, however, that during the early months of infant life, no kind of milk, however carefully obtained and modified, can compare with the mother's milk.

After the mother obtains good milk, she should be taught how to take care of it properly at home, that it may remain safe, and for this purpose the distribution of free ice in summer is of great aid. "The infant death rate," says Sir Arthur Newsholme, "measures the. . . standards of morals and sanitation of communities"; and one may add that the provision of clean milk by the community is the one most important measure in reducing infant mortality. The community that does it has thereby established its standard of sanitation and its degree of civilization, for, as someone has well said, "infant mortality is the most sensitive index of the civilization of any community."

FOOD OF THE CHILD.

After the child has graduated from its milk diet, the community has still a duty in seeing that it is provided with proper food. Food inspection laws, so far as they are efficient, and the pure food law protect, to a certain extent, the sources of supply. Instructions in the wholesome preparation of food and food values is afforded through domestic science centres, visitors in the homes of the poor, and the teaching of domestic science in the schools. The mother is to be taught that good and nourishing food need not mean expensive food; but she must possess some elementary knowledge of food values and some experience in properly cooking it.

If the child is insufficiently nourished at home on account of ignorance or poverty, school lunches seem to be the obvious remedy, and the child should be encouraged to bring a few pennies for them; for the parents should be made to feel that they are primarily responsible for the well-being of their own children.

It is surprising how much good food value can be obtained for a few cents. Here are some sample lunches served in the High Schools of Boston at cost price, providing about one-fourth of the required daily nourishment for boys and girls of fourteen years:—

TABLE I.

Baked beans	5 cents
Graham bread	2 "
Cocoa	3 "
	10 "

Proteids, 23 grs.; fat, 23 grs.; carbohydrates, 80 grs.; Calories, 605.

TABLE II.

Creamed dried beef	5 cents
Lettuce sandwich	3 "
Milk	3 "
Cake	2 "
	13 "

Proteids, 24 grs.; fat, 28 grs.; carbohydrate, 80 grs.; Calories, 682.

For girls of fourteen years:—

TABLE I.

Macaroni and cheese	5 cents
Graham bread and butter	2 "
Milk	3 "
	10 "

Proteids, 22 grs.; fat, 22 grs.; carbohydrates, 65 grs.; Calories, 570.

TABLE II.

Creamed eggs	5 cents
Graham bread and butter	2 "
Cocoa	3 "
Sponge cake	2 "
	12 "

Proteids, 19 grs.; fat, 21 grs.; carbohydrates, 80 grs.; Calories, 614.

SCHOOL INSPECTION.

When the child arrives at school age, communities quite generally now provide medical inspection and examination of all school children. In Boston such inspection is now very thoroughly administered by competent physicians acting under the Board of Health, assisted by nurses acting under the School Committee. The physician visits the school every day to detect any case needing urgent medical attention. In addition, he is required to make a yearly physical examination, and oftener if the chief of the division shall so order, of every pupil in the school districts, recording his results.

This examination is very thorough and a long list of defects and diseases is submitted, which the physical examination covers. Examination of the heart, lungs and spine over the clothing is not accepted. Notice of defects de-

tected is sent to the parents or guardians of defective pupils. School nurses can take children, with the consent of their parents, to the proper dispensaries for treatment or operation, such as removal of adenoids or diseased tonsils.

Thus, from the time the child enters school until it graduates, the community exercises constant supervision over it.

In one of the recent annual reports of the Division of Child Hygiene of the Boston Board of Health, of 118,781 pupils examined, 77,931, or 68%, defects were discovered. The defects originating about the mouth, as defective nasal breathing, hypertrophical tonsils, defective teeth, defective palate and cervical glands were 100,-236, or about 84% of all defects found. The dental defects were 51,340, or about 66%.

CARE OF CHILDREN'S TEETH.

Defective teeth furnish excellent foci for bacterial infection, and the tubercle bacillus among other micro-organisms. "Diseased teeth become human culture tubes with ideal culture media for the germs of disease."

What are communities doing to protect the teeth of children, in more than half of whom they are diseased? In Boston there has recently been completed a unique institution, the like of which does not exist anywhere in the world,—an institution to provide for the dental requirements of the children of the city, the gift of two brothers. It is called the "Forsyth Dental Infirmary for Children." It cost $800,000, and is an imposing marble building, one of the ornamental structures of the city. In addition, an endowment of two million dollars is provided for its maintenance. Not only the care of the teeth is included in its functions, but related oral conditions, such as defective palates, adenoids, etc., and general oral hygiene and prophylaxis. Seven hundred and sixty-eight patients can be treated a day, or three treatments annually of 127,200 children. The staff consists of consulting, visiting and permanent dentists (the latter being paid), and physicians. There is a research laboratory, a museum, and a lecture hall. Complete work is done for each patient, and the child is followed up by the school nurse or some other instrumentality until the entire mouth is clean and healthy, including the nose and throat.

When one considers the opportunities for bacterial infection from diseased teeth and unhealthy oral conditions, and the suffering and disease induced in later life from the neglect of the teeth and mouth in childhood, the value of such an institution can hardly be overestimated. Every community should provide some such opportunity for the care of its children's teeth when the parents are unable to do so.

PLAYGROUNDS.

Another insistent demand of child life which the community is coming to recognize is an opportunity for play and recreation, and, through municipal or other instrumentalities, playgrounds with competent supervision are being established in our large cities. A rather novel plan was recently devised in New York City, where, during certain hours of the day, certain side streets were given over to the children, all traffic on such streets being suspended. Well-ordered play is not only the child's natural way of obtaining physical exercise, but it is in the highest degree educative, inculcating unselfishness, self-control and the value of team work,—lessons so valuable in the competitions and associations of after-life. One recalls the saying attributed to Wellington, that he won the battle of Waterloo upon the football field of Eton.

Auxiliary to playgrounds are sand gardens for young children. Many states and municipalities also provide public gymnasiums, baths and bathing beaches, used alike by children and adults.

THE CHILD AND TUBERCULOSIS.

Most authorities now believe that the majority of cases of tuberculosis in adult life become infected in childhood. Thus Hamburger has demonstrated that latent tuberculosis is present in 71% of children from seven to ten years of age. "Our greatest hope for ultimate success in the suppression of tuberculosis," said recently the State Commissioner of Health of Massachusetts, "must lie in the prevention of the development of tuberculosis in the child with a predisposition for, or latent infection of, tuberculosis."

Although open pulmonary tuberculosis is not so frequent in childhood as in adult life, closed tuberculosis is more so, and this form, which is often difficult of diagnosis and is frequently denominated the "pretubercular" stage, may be only suspected by the presence of anemia, malnutrition and debility. For the majority of such children the open-air schools, with intervals for rest and additional nourishment, offer the widest opportunity and are generally sufficient. I am happy to say that such schools are rapidly coming into existence throughout the country. For other children, a *continuous* open-air life in the country is desirable; and for those in whose home a case of tuberculosis exists the safest way is their removal from the dangerous environment. For this purpose so-called preventoria have been established, an excellent example of which is the one at Farmingdale, N. Y., to which children from New York City are sent.

Either by the establishment of such preventoria or by other means the community should protect its children who are exposed to tuberculosis in their homes. It is a general custom now in all tuberculosis dispensaries to submit all the children of a family in which a case of open tuberculosis is present to a careful examination, for Dr. Sachs has shown that in the

examination of such children 28% between the ages of five and ten years, and 25% between ten and fourteen years show evidence of tuberculosis. In 600 patients from the state sanatoria of Massachusetts there were 966 children under fifteen years of age in their immediate families. Of these 362, or 38%, were examined, and the number found to have consumption was 10½%. "The fact stands beyond a doubt," says Prof. Nietner, "that in a very large majority of cases the source of infection is the human subject suffering from 'open' tuberculosis, and that infection is effected through the close intercourse resulting from family life within the walls of the home."

The French "League for the Preservation of Children from Tuberculosis" has for its main object the removal of children from homes where they are exposed to infection, and Prof. Grancher, who established the League, says he was moved to do this from the remark of Pasteur in regard to the diseases of the silk worm, that in order to save a race that is threatened by an infectious disease, the best plan is to save the cocoon.

A very interesting experiment was inaugurated several years ago in New York, in the so-called "Home Hospital." A family in which a case of tuberculosis exists is removed entire to this institution, where they live under the best hygienic conditions. One of the chief objects this experiment endeavors to accomplish is stated to be, "to prevent the spread of tuberculosis from the afflicted to well members of the family, particularly to protect the children from infection."

When a child is found to be actively tuberculous, sanatorium treatment should be provided as in the case of adults. This is already done in many communities. The Boston Municipal Consumptive Hospital has a department for children, and so does one of the state sanatoria of Massachusetts, in both of which school instruction is given when the child's condition permits.

A not infrequent form of tuberculosis in children is that of the glands, bones, joints, spine, and tubercular peritonitis. There is a difference of opinion as to the cause of infection in these cases, but undoubtedly the bovine tubercle bacillus conveyed in milk is the causative factor in some of the cases. This is an added reason why every means should be employed to safeguard the milk supply. Children suffering from these forms of tuberculosis should be provided with sanatorium treatment, either in the country, or better, when possible, at the seaside. Rollier's Sanatorium in Leysin, Switzerland, is a striking illustration of the effects of mountain air and heliotherapy; and the Sea-Breeze Sanatorium at Coney Island, New York, illustrates the value of sea-air and sunshine. Not far from this institution the city of New York has acquired a location with 1000 feet of beach, at a cost of $1,250,000, where there is in the process of erection a sea-side sanatorium for surgical tuberculosis in children, to accommodate 1000 patients, at a cost of $2,540,000.

CHILD LABOR.

Excessive child labor in mill and factory under an unhygienic environment is a potent means of developing the child's latent tuberculosis or rendering him susceptible to a new infection. Laws have been enacted or proposed upon the subject in almost every state, and in many instances the fight for the adequate protection of the child from such exploitation has been a stubborn one. That the growing child should be subjected to the strain of long hours of the grinding monotony of mill work is manifestly a short-sighted policy, as well from an economic point of view as from a humanitarian one. Not long ago a committee of the Legislature of one of our states agreed that the eleven-hour day was the proper working period for ten or twelve year old children! What opportunity do children thus treated have to develop into vigorous manhood or womanhood? That the child, with its beautiful innocence and trust beyond knowledge, for whom, as someone has said, "the gates of heaven swing inward," should thus be despoiled of its divine heritage of natural child life is a disgrace to our present civilization!

HEALTHY HOMES.

The community again has a duty in the housing of its children. A child should have sunlight, fresh air and cleanliness in its home; for "where the sun enters not, there the doctor comes." Slums with crowded tenements are not inevitable even for the poor, and through boards of health, tenement house inspection and building laws, it is possible, I believe, to provide wholesome dwelling places for the children of the wage-earner even in the large cities. Unsanitary, sunless and ill-ventilated dwellings, where many are crowded into a small space, are favorable conditions for developing the tuberculous child, as abundant evidence has demonstrated.

THE SPIRITUAL DEVELOPMENT OF THE CHILD.

The comprehensiveness of my subject permits me to include almost any and every endeavor which it is the province of an intelligent community to make for the conservation of child life. In conclusion, however, I desire to advert to but one other subject which, it seems to me, should have consideration by the community. When we have provided for the physical well-being of the child and its mental training, there is a third and equally important duty of the community, in my opinion, and that is to offer the child means of spiritual development in the years when its imagination is so active, and it lives so much in the realm of fancy. Ideally, the home and the church are the places and the instrumentalities for doing this; but the home often fails in this duty and, in consequence, fails

to invoke the aid of the church. If we believe that Christianity is the foundation of character, and that character in the individual establishes the character of the community, and that a community of Christian ideals will best protect and conserve its child life, it is, then, of supreme importance that the community should afford opportunity to its children of religious instruction and training. I can see no other way of doing this in a communal way than somehow through the medium of the public schools. A community imbued with an altruistic, a Christian, spirit, can be depended upon to care for its children, and needs not to be coerced by law to do certain things needful for their welfare, or deterred by the menace of punishment to refrain from doing things harmful to them. The spirit of the community will dictate the actions of the community, and if a community believes the words of the Master relative to the child, that "of such is the kingdom of heaven," it will guard and protect the child so that it may grow towards physical and moral perfection, an exemplar of the Christ-child.

CONCLUSION.

The child, with its innocence, its faith, its mysticism, nay, its very ignorance, should appeal, if anything can, to the very best instincts of the community, as well as to its selfish interests, for the child of today makes the community of tomorrow. Whatever the physical, mental and moral education of the child is *now* will be reflected in the character and standards of his day when he transmutes his present training into action. "It would be a dreadful calamity," said ex-President Roosevelt, "to continue to waste and destroy the resources of the nation, as until a few years ago we were wasting and destroying them, as we still, in certain respects, continue to waste and destroy them. But it would be even a worse calamity, because irremediable, if we wasted and destroyed the manhood and womanhood of the nation. And the only way permanently to conserve the manhood and womanhood is to conserve the childhood."

Original Articles.

TRANSVESICAL PROSTATECTOMY: A DISCUSSION OF SOME UNSETTLED POINTS IN THE PREPARATION FOR AND TECHNIC OF THE OPERATION.*

BY PAUL M. PILCHER, M.D., BROOKLYN, N. Y.

THE occasional surgeon, or the surgeon unacquainted with the science of urology other than as it crosses his path in the operating room, does not need to discuss the disputed questions concerning obstruction at the neck of the bladder due to prostatic hypertrophy or distortion. To this sort of man a complete examination of the patient is not necessary. All that he needs to know is that there is an obstruction at the neck of the bladder, that it is probably due to an enlarged prostate, and that it can be removed surgically.

If he is lucky his patient will survive his operation, with the chances of more or less permanent disability. This is sufficient for some men. To others of us who have passed through the developmental stage of prostatic surgery, who can look back upon an uncontrolled hemorrhage, the unexplained death of some patients whose good general appearance lured us into a state of false security, we feel that we need a great deal more information in order that we may know beforehand what to expect in a given case and to choose, if may be, the safest course to pursue under the circumstances.

To my mind, a thorough examination is most essential. I believe that we should determine, if possible, before operation whether the obstructing prostate is due to cancer, or to simple adenoma; whether there is a stone present in the bladder; whether the symptoms are due to the presence of this stone or not; whether there is a new growth present in the bladder. I have seen all of these conditions in cases in which I had expected to find only a simple hypertrophy of the prostate, the mistake being due, I believe, to my own carelessness in not making a thorough and exhaustive, but not exhausting, examination of the patient.

Aside from the ordinary vesical examination at our clinic, we employ first the x-ray to determine the presence or absence of stone in the bladder. Sometimes we are able to determine the outline of the prostate.

Next, we pass a simple examining cystoscope, such as that devised by Wappler especially for this work, constructed with a beak curved like an ordinary sound. We find we are sometimes able to introduce this cystoscope into the bladder when catheters fail. A thorough cystoscopic exploration is made, if possible.

Both the cystoscope and the x-ray are of advantage in that a stone may be hidden in a diverticulum and not be seen by the cystoscope. In these cases the cystoscope also determines the presence or absence of a new growth.

CANCER OR ADENOMA.

Rectal Examination is important in helping us to determine between cancer and adenoma. We suspect cancer in all patients under 60 years of age, who have had any considerable degree of obstruction. We have had cases of adenoma in men between the ages of 55 and 60, but very few in number. We suspect cancer when the symptoms are rapid in their onset. By that I mean have been complained of only for a year in older patients. It has been our experience

* Read at the winter meeting of the New England Branch of the American Urological Association in Boston, on March 30, 1915.

that the patients with the longest histories of frequency of urination, etc., are the least apt to have cancer of the prostate.

Primary tuberculosis of the prostate has been met with in one patient of 55 years of age. It simulated cancer in its general characteristics.

There are other differential points which it is not necessary to go into at present, but from the standpoint of treatment as adopted at our clinic, it is quite important for us to know beforehand, if possible, whether the case is one of malignancy or simply adenoma.

I believe it is universally accepted that all cases of prostatic obstruction should receive more or less preliminary care. The question of what form this treatment should take has not as yet become standardized, but in the majority of cases it has resolved itself into a question of drainage of the bladder; either using a catheter to empty the bladder at regular intervals for a given period of time, the use of an indwelling catheter, or the establishment of suprapubic drainage by means of a cystostomy.

CHOICE OF METHOD FOR RENAL DECOMPRESSION.

As a temporary expedient intermittent catheterism is simple and efficient. Its dangers include the possibility of septic infection, which in certain individuals is a minimum risk, but in the majority of cases the continued use of a catheter is sure to result in a train of septic consequences of the most serious character. Again, there is the danger of profound constitutional reaction, which has been occasionally observed following the simple use of a catheter, so profound in some cases as to terminate in death in a few hours. Occasionally in some cases each attempt at catheterism is followed by a more or less septic condition. These observations refer more especially to the advanced cases of prostatic obstruction where cystitis is present and the obstruction has existed for a sufficient time to cause renal insufficiency and more or less invalidism. Intermittent catheterism used early for the beginning stages of chronic prostatism is almost devoid of danger.

The *catheter a demeure*, where it can be tolerated, is free from criticism, other than the unnecessary amount of irritation of the urethral mucosa which results from its presence in the urethra. It must always be remembered that danger accompanies any method which might bring about a sudden emptying of the bladder that has been distended for any length of time.

Suprapubic cystostomy is attended by the dangers common to all minor surgical operations; it can be done entirely under local anesthesia, with practically no surgical shock attending it. It completes the first step of the operation of transvesical prostatectomy and affords

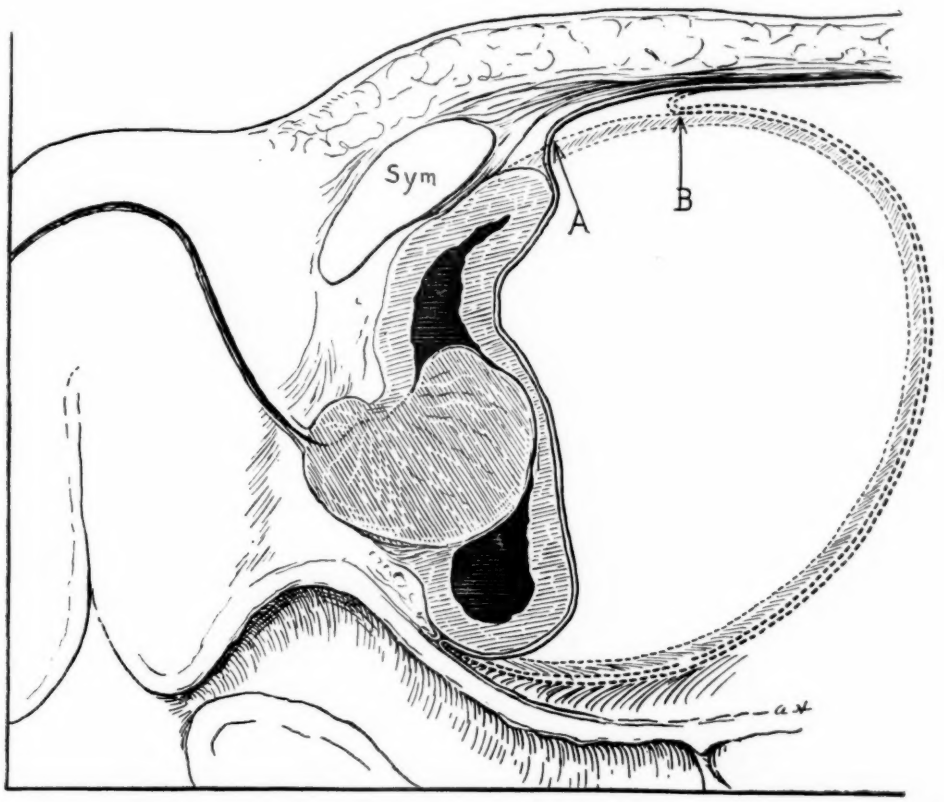

FIG. 1.—Showing the surgical problem. Special attention should be directed to "A", the fold of peritoneum in its relation to the symphysis when the bladder is contracted. "B" the raising up of the peritoneal fold when the bladder is dilated. The relation of "A" and "B" to the symphysis is quite variable and in some is fixed almost at the symphysis.

temporary relief to urinary prostatic obstruction, while the best general and local conditions are being secured for the later radical removal of the obstruction itself. It is free from any reflex effects which attend the introduction or residence of a catheter in the urethra. It has still further the advantage not only of easy and adequate urinary drainage, but also of placing at rest the urethral tract and of being the most powerful agent in overcoming any reflex influence which the irritation of that tract may previously have been producing. Furthermore, if a foreign body is present in the bladder it may be removed at this time, without the added disadvantage of surgical shock. The tissues through which the bladder is explored, are exposed to infection, without the depressing systemic effects which accompany a major operation.

In advanced cases, we believe that repeated catheterism is wrong. We do not object to the indwelling catheter under certain conditions, and at times feel that it is distinctly indicated, especially in those cases where there is an enormous distention of the bladder with edema of the legs, and as a routine when there is an enormous over-production of urine. In the presence of intravesical hemorrhage, advanced infection, or large calculi, we feel that suprapubic cystostomy is the method of choice as a preliminary to transvesical prostatectomy.

At our clinic *we perform a suprapubic cystostomy as a preliminary operation in every case of prostatic hypertrophy due to simple adenoma*, even though we have used an indwelling catheter previous to this.

The chief objection to the two-stage operation has been the discomfort due to leakage of urine over the abdomen of the patient. This has been overcome at our clinic by adopting the following technic:—

Operative Technic of First Operation. Preferably with the bladder filled with fluid, a suprapubic cystotomy is done under local anesthesia, using one-half to one-quarter per cent. novocain solution to infiltrate the tissues. The points of the technic which we emphasize are: 1. Exposure of anterior surface of bladder as high up as possible. 2. Making opening in bladder at least three inches from urethral opening (Fig. 2). 3. Drainage of bladder by Pezzer catheter or Pilcher modification. 4. Purse string suture around opening in bladder to secure water-tight joint (Fig. 3), employing same principles as in drainage of gall bladder. 5. Immediate resuture of suprapubic wound, obliterating prevesical space, reconstruction of the facial planes, etc., and closing the wound without drainage except where button drainage tube emerges. (Figs. 4 and 5.)

Results. 1. Primary union of wound in practically every case.

2. Absolutely dry wound without any leakage of urine.

3. Complete control of urine for tests.

4. Patient out of bed in 24 hours.

5 Half of the operation complete without anesthesia or surgical shock.

Question of when to operate. Our rule is that as soon as the bladder can be safely emptied the suprapubic cystostomy should be done. In all cases of emergency, where there is active hemor-

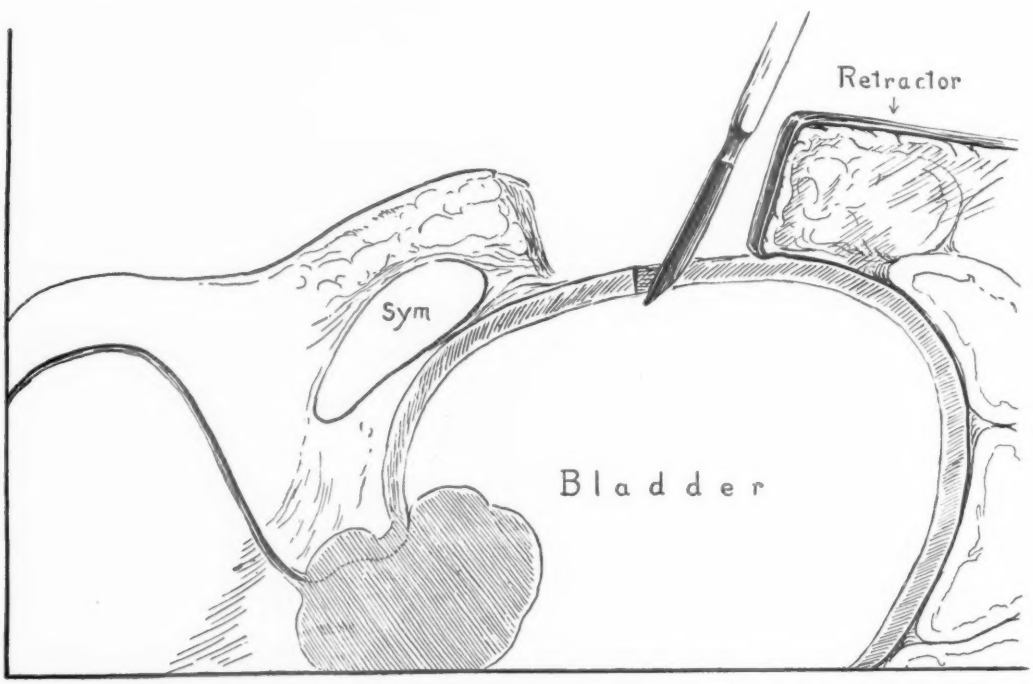

FIG. 2.—Showing the position of incision into the bladder preferably at a point three inches from the urethral opening. The peritoneal fold has been reflected high up.

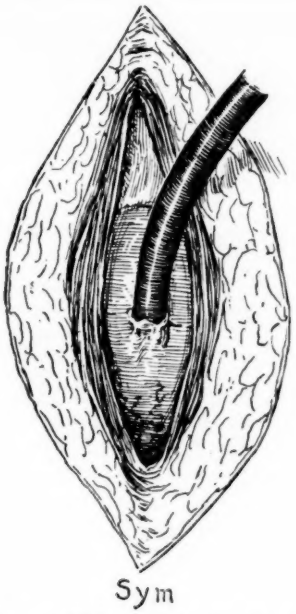

FIG. 3.—The Pezzer or Pilcher catheter secured in anterior wall of bladder held in place by purse string suture, secured similarly to tube in drainage of gall-bladder.

rhage into the bladder, suprapubic cystostomy should be done.

How long shall we wait before removing the prostate? In some cases we can determine within two or three days that any time will be suitable for removal of the prostate. In other cases we feel equally sure that the prostate could never be safely removed. In general, after a suprapubic cystostomy has been performed and the patient is out of bed, if his general bodily functions are working well, his mind is bright, his eyes are clear, his urine is nearly normal, of good specific gravity, containing only a trace of albumin; when the phthalein test shows an efficiency of from 30 to 50%; when the patient is sleeping well and eating well, we feel perfectly safe in removing the prostate. We prefer, as a rule, to wait eight or ten days after the first operation in order that we may have a more perfectly healed suprapubic wound through which to work, for under these circumstances we have a shorter convalescence and the urinary fistula closes more quickly.

Another thing which I believe is quite important is that one should never try the second operation unless he can have a patient under *observation* more or less continuously *for the 48 hours* following the operation. In other words, we should not perform the operation out of town at so great a distance that we could not reach the patient within an hour.

In the more advanced cases where there is a severe depression, in what we have termed the second stage, the problem is not quite so easy. We may have to wait weeks or months before we feel that the patient is in proper condition for his second operation.

In studying the *question of renal functions,*

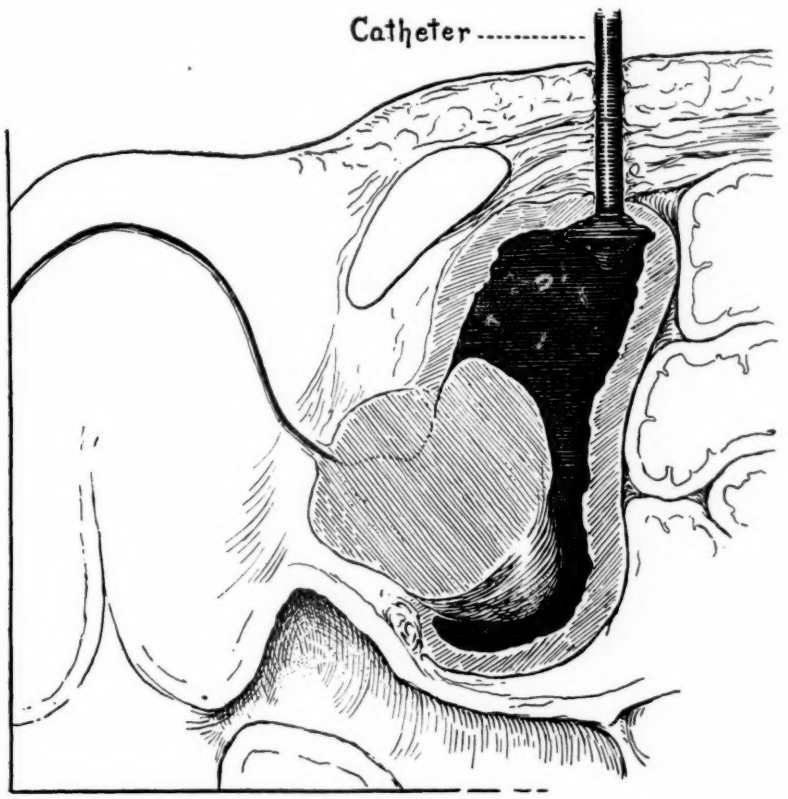

FIG. 4.—A bladder drained by Pezzer or Pilcher catheter showing wound entirely closed about catheter and the relation of catheter button to prostate. This method drains the bladder completely without any leakage.

we have found that there are *two distinct factors* which are helpful in determining the probabilities of recovery. People seem to forget the fact that the kidney is not the only organ upon which life depends, and, if we find that the renal function is sufficient, the patient may die from vascular disturbance, cardiac failure, apoplexy, surgical shock or any one of the different disturbances.

In trying to determine, however, the functional sufficiency or impairment of the kidney, we recognize three distinct factors which may be roughly designated pre-renal, renal and post-renal periods. These factors have been discussed in other papers. The phthalein test gives us the index of renal sufficiency at a given time, and a series of phthalein tests taken under varying conditions,—pre-operative, post-operative and during the convalescent stage, gives us an index of the stability of renal sufficiency, so that in each of our cases we must determine, if possible, both of these indices, that of efficiency and that of the stability of the renal sufficiency. We have learned that, when the renal efficiency is very low, that is, below 5 or 7% in two hours, it is very unsafe to attempt a prostatectomy.

The speaker showed a series of lantern slides demonstrating the various features of the two-stage transvesical operation, showing first the technic of the first operation, charts of individual cases used in determining the time for the second operation, the technic of the transvesical prostatectomy pointing out the methods employed at the Pilcher clinic for enucleating the prostate, emphasizing the importance of removing all débris from the bladder and searching for small prostatic stones which might have been left in the bladder, then describing the suprapubic drainage following the second operation in which a large calibre drainage tube is used for 24 hours. This tube is removed after 24 hours and a button catheter inserted in its place. This button catheter controls the output of urine from the bladder within two or three hours and again the patient remains dry.

In discussing the control of hemorrhage the speaker recommended the use of the Hagner bag and presented a modification of his own, which consists of a bag through which a catheter is led out, which drains the bladder from below.

The most important step which has been worked out after the second operation consists in removing the drainage tube after 24 hours and inserting the button catheter in the bladder, and draining through the button catheter for three days, and then putting a cork in the button catheter and having the patient empty his bladder voluntarily every hour for a period of three or four days, then removing the button catheter, and it will be found that the patient continues the urination. This has been a very great step in advance at the clinic.

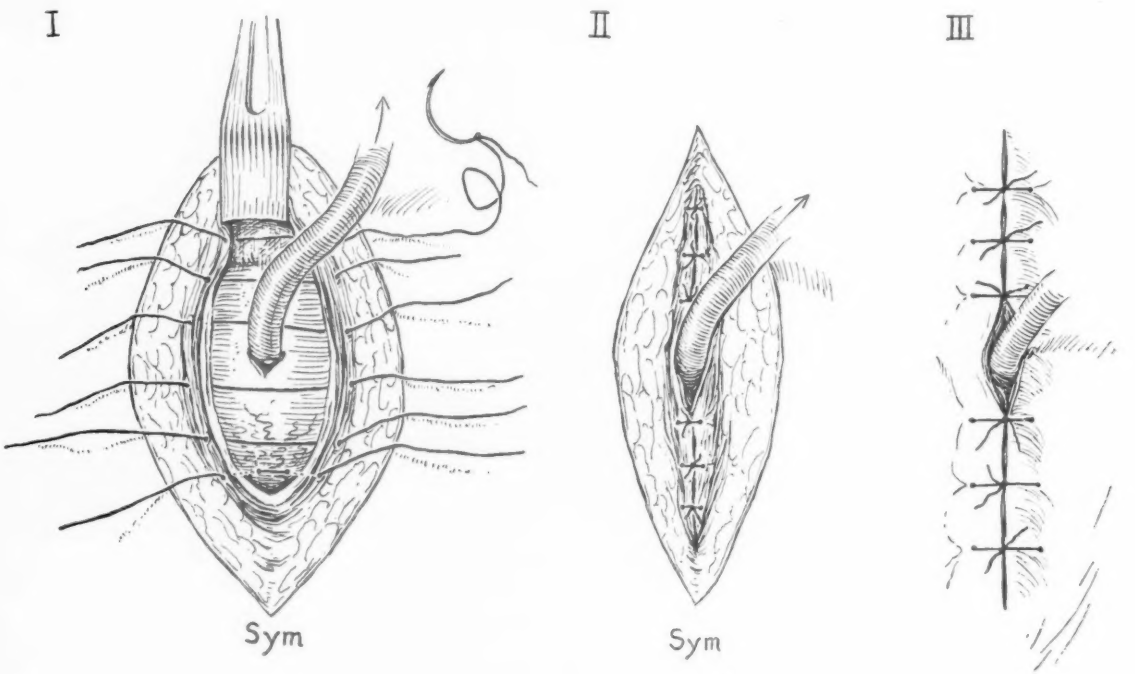

FIG. 5.—Various stages in closing of wound after suprapubic cystotomy.

I. Placing the first sutures, the lowest suture closing off the prevesical space and including wall of bladder, the second and third sutures drawing together the rectus fascia and the upper three sutures drawing together the fascia below the peritoneal fold.

II. Further tying of sutures and closing the wound tightly around catheter.

III. Suturing the skin with silk. Closing wound around catheter without drainage. These wounds heal almost invariably without infection.

A STUDY OF THE EFFECT OF ROWING ON THE HEART.

By Roger I. Lee, M.D., Boston;
Walter J. Dodd, M.D., Boston;
and
Edward L. Young, Jr., M.D., Boston.

An abundant and somewhat contradictory literature has grown up concerning the effect of exercise on the heart. Shumacher and Middleton[1] give an extensive bibliography and a brief resumé of some of the more important work. One of the most important aspects of this disputed point is the effect of our present rather elaborate system of competitive college athletics on the heart. Shumacher and Middleton, in a study of athletes at the University of Wisconsin, incline to the view that athletic training at first leads to physiological hypertrophy, but when prolonged and marked by severe athletic contests it usually leads to hypertrophy, plus dilatation of a variable degree, frequently marked by valvular insufficiency. While they grant that the hypertrophied heart, even when dilated and giving distinct evidence of valvular insufficiency, may prove more fitted to carry a man through a severe athletic contest than a normal heart, they believe that the so-called "athletic heart" is a distinct disadvantage to normal human activities. On the other hand, James Mackenzie[2] of England, with his wide experience in cardiac disease, seriously doubts the existence of any such pathologic condition as the so-called "athletic heart." MacKenzie maintains that "the evidence on which the heart's impairment was based was those manifestations of murmurs or irregularity which my experience had shown to be perfectly consistent with a healthy heart." Cabot[3] analyzed 600 successive and unselected cases of patients with the signs of a failing heart with the purpose of determining the etiologic factor. In no case was he able to attribute the cardiac impairment to athletics or immoderate exercise.

Perhaps the most constant assertion of the believers in "athletic hearts" is that these hearts are enlarged. The evidence of enlargement has been based usually on percussion outlines, but more recently on Roentgenologic data, and sometimes on both, as in the work of Shumacher and Middleton. There are serious objections to evidence based solely on percussion findings. In the first place the accuracy of percussion can be questioned, as a comparison of the normal percussion outlines as given by various standard text-books shows. In the second place, a very large element of personal equation is introduced. The Roentgenologic examination, even as perfected, has also certain drawbacks. Posture, breathing, the distance of the x-ray tube,—all distort the cardiac picture. For example the size and shape of the heart is quite different in forced inspiration and in forced expiration. Again, the x-ray tube will project a shadow of much larger size when near the heart than when distant. However, it has been determined that with the x-ray tube seven feet distant no appreciable error is intruded, since the rays at that distance are essentially parallel. It has further been determined that during quiet breathing, that is, in the absence of forced inspiration and forced expiration, the contour of the heart is constant. It seems, therefore, that with this method, certain reliable data ought to be obtained. That is the method which we have used in this study. We have omitted purposely in this particular study the effect of a single athletic contest on the size of the heart. We have also omitted the effect of a single period of training. The important consideration as we see it is—does prolonged participation in athletics cause a permanent enlargement of the heart? It must be granted that participation in violent athletics may cause other impairments than increase in size. Unfortunately, at the present time there seem to be no adequate discriminating criteria of those impairments other than the well known methods of auscultation and blood pressure determination. Furthermore, our evidence is based on individuals who have participated in one form of athletics, namely, rowing, since by common consent rowing has been supposed to have been the most conspicuous cause of athletic hearts. Our individuals have been trained under a uniform system and under careful medical supervision. It is possible that the results which hold in Harvard University are not applicable to other conditions, in other universities and elsewhere.

For the purposes of study three groups were selected. Group I consisted of sixteen freshmen, who were chosen for two reasons: (1) they were essentially of the same build as individuals of the other group who had already participated in hard rowing contests; (2) it is hoped by repeating the observations on Group I throughout their college course, especially if some of them participate in strenuous athletics during that time and some do not, to secure more definite data. All the members of this freshman group were individuals of the vigorous type of young manhood. As is common in such types, all had been rather active in physical exercise, a few had rowed previously.

Group II consisted of 16 candidates for the university crew, 3 were seniors, 8 were juniors, and 5 were sophomores. The five sophomores rowed in the class crew race in June, 1914. Four of the 16 had rowed in a varsity four mile race. Six had been on the Harvard second crew that went through the same preliminary period of training for the four-mile race, but raced at Henley, England, in July, 1914. Therefore they were all athletes with a definite period of athletic activity behind them. The third group consisted of ten graduates; this group averaged over ten years of rowing. All had rowed in a four-mile intercollegiate race in their college years and all had been active in competi-

tive rowing since graduation. Seven were members and one a substitute in the Union Boat Club crew that raced at Henley in July, 1914. The other two were men who had participated in many rowing races since graduation.

On physical examination there were no irregularities in heart action in any of the groups. On a single examination there were no blood pressure observations that could be interpreted as abnormal. The urines of all were free from albumen and sugar. None of the three groups presented any evidence of cardiac enlargement by the usual methods of percussion and auscultation. One of Group I, that is, the freshmen, presented a murmur which was interpreted as functional. One of Group II presented a similar systolic murmur. Two of Group III presented very slight functional murmurs. Some of each group were supposed to have athletic hearts. None of these had murmurs.

The Roentgenological examinations were made during February and March, 1915, before the active rowing season. The examination was made under identical conditions by the method previously stated. The pictures were all taken standing and the x-ray tube was carefully placed on a level with the mid-portion of the thorax at the seven-foot distance. In addition fluoroscopic examinations were made in each case, but showed no abnormality. By the use of calipers the antero-posterior and lateral diameters of the chest were determined in the line of the nipples.

The appended tables show the details. Groedel's table, giving the average size of the heart in male adults of a similar height, is also appended. Grodel used the orthodiagraph method, which in our hands has not given so satisfactory results in regard to accuracy as the seven-foot plate method. Furthermore, Groedel's method gives a slightly smaller reading than is obtained by our method. Groedel utilizes in his table all types of individuals of a given height and strikes the average. It has seemed to us that it is reasonable to suppose that muscular types should be compared with the same types with and without athletic competition. We hope to establish later a standard for different types. With the present wide prevalence of various athletic activities it has been impossible to obtain any considerable group of that type, since practically all of them at some time had participated in athletics to a certain extent that would render their use as a standard open to criticism on critical analysis. One individual is included who had never participated in any athletic contest, even in his school days and who had for many years taken very little exercise. He is included as giving an interesting, but not important comparison.

From the tables it will be seen that the freshmen show an average width of the heart of essentially 13 cm., varying from 11.5 cm. to 14.2 cm. The varsity candidates show an average width of 13.85 cm., varying from 12.7 cm. in a junior to 15.1 cm. in a sophomore. The graduates give an average width of the heart of 14.04 cm., varying from 11.5 cm. to 15.5 cm. The non-athlete shows a width of 14 cm. Groedel's average is 13.2 cm. It will be seen that the hearts of the younger freshmen are somewhat smaller in width than those of the varsity candidates or the graduates. The difference between the varsity candidates and the graduates is surprisingly small, .19 cm. or 1/13 of an inch.

In a similar way a comparison of the length of the heart shows that Groups II and III are very close and the freshmen show hearts that average somewhat shorter, although even here the freshman length is greater than the normal average, as obtained by Groedel's method. The non-athlete had a short heart, well below Groedel's average and considerably below the average of all the groups.

The width of the aorta was also measured and showed similar findings, namely, Groups II and III were very close, and the freshmen group gave a reading slightly smaller.

It is apparent then that there is no real difference between Groups II and III, although Group III averages 8 years older and averages several years more of strenuous athletic participation. The increase in age and increased athletic activity has had no effect upon the size of the heart. The freshman hearts are slightly but definitely smaller than the other two groups. The difference can hardly be attributed to the difference in weight or height, because those differences between the two groups are too slight. The freshmen are, of course, the youngest group, but there is much less difference between the average age of the freshmen and the average age of the varsity candidates than between the varsity candidates and the graduates. An important consid eration, however, is—have the freshmen attained their maximum development both in regard to general skeletal and muscular development and also in regard to their heart? Anyone familiar with undergraduates appreciates the fact that the average freshman has not reached his maximum development. That would not necessarily hold true of these individual freshmen. Casual inspection, however, discloses that while the freshmen group are as tall and weigh as much as the varsity and graduate students, the freshmen are very apparently not so well developed or muscled. The measurements of the diameters of the chest taken during quiet breathing gives rather interesting information. The freshmen averages were 29.25 cm. and 19.34 cm., the varsity averages were 29.87 cm., and 20 cm., the graduates were 31.6 cm. and 21.6 cm. Here for the first time we see a gradual increase running through the three groups corresponding to the age differences. Curiously enough, however, the increase in age and increase in chest diameter in the graduate group is not associated with an increase in the size of the heart. In attempting to find some relation, particularly in regard to development, it was found that the total of the two diameters of the chest in centimeters, plus the

TABLE I.—FRESHMEN.

No.	Age.	Height.	Weight.	Lat. D.	A. P. D.	M. L.	M. R.	T.	L.	A.
1.	19	6.	181	31	19.5	9.5	3.5	13	14	5
2.	19	6.1	167	29	19	8	3.5	11.5	13	5
3.	17	5.11¼	156	28.5	20	9.4	4	13.4	14.5	5.2
4.	19	6.1	156	29.5	20	9.5	4	13.5	16	5
5.	20	6. ½	166	29.5	18.5	9	4.4	13.4	15.3	5.7
6.	19	5.11¼	162	27.5	17	7.9	4	11.9	13.2	5.5
7.	19	6.2⅛	183	31	20	8.5	4.2	12.7	14	5
8.	18	6.2¾	183	29	17.5	10.5	3.4	13.9	16.5	5
9.	19	5.10¾	177	30	21	9.5	4	13.5	16	5
10.	18	5.8¼	158	28	19	8.5	5	13.5	15	5
11.	19	6 ½	183	28.5	18.5	9	4	13	14.2	5.2
12.	19	6 ½	175	28	22	8	5	13	13.5	5.5
13.	19	6 ½	164	27.5	20	8.8	4.5	13.3	15.5	5
14.	17	5.10½	182	30	19.5	9.5	4.7	14.2	15	5.5
15.	19	5.10	186	29.5	19.5	10	2.8	12.8	14	4.5
16.	18	5.11½	171½	31.5	18.5	8.2	3.7	11.9	13.5	5.2
Average	18.6	5.11.8	170.4	29.25	19.34	8.98	3.98	12.96	14.57	5.14

Lat. D. = Lateral diameter of the chest, line of nipples.
A. P. D. = Antero-posterior diameter of chest, line of nipples.
M. L. = Distance from the median line to left border of heart.
M. R. = Distance from median line to right border of the heart.
T. = Total width of heart.
L. = Length of heart.
A. = Width of the aorta.

TABLE II.—VARSITY CANDIDATES.

No.	Age.	Height.	Weight.	Lat. D.	A. P. D.	M. L.	M. R.	T.	L.	A.
17.	20	6.1½	186	30	21	9	5.1	14.1	15.5	5.5
18.	22	6.2½	185	31	22	9.9	4	13.9	15.5	5
19.	19	5.11½	162	30	18.5	10	4	14	15.2	6
20.	20	6.1	168	28.5	18.5	9.1	4.5	13.6	14.5	5
21.	19	6.3	185	32	22	8.5	6.6	15.1	15	7
22.	18	6.2	187	28.5	21	7.7	6	13.7	17	7
23.	20	6.2	170	30	20	9	4.6	13.6	14	6
24.	20	5.10	170	31	21	8.7	4	12.7	15	5
25.	21	6 ½	176	30	20	10	4	14	15.5	6
26.	20	6.1½	186	31	21	8.5	4.9	13.4	14.6	5.8
27.	21	6	170	30.5	20	10.2	4.5	14.7	15.8	5.5
28.	22	5.11	177	29	21	9.1	4.5	13.6	14.8	5.8
29.	21	6 ¾	168	29	21	8.6	4.6	13.2	13.5	5.7
30.	21	5.11	152	28.5	18.5	8.5	5	13.5	15.7	6
31.	22	6.2½	175	29	18	9.1	4.8	13.9	15	5.2
32.	20	5.11	167	30	19	10.5	4.2	14.7	15.6	6
Average	20.37	6.0.7	174	29.87	20	9.15	4.7	13.85	15.1	5.78

TABLE III.—GRADUATE OARSMEN.

No.	Age.	Height.	Weight.	Lat. D.	A. P. D.	M. L.	M. R.	T.	L.	A.
33.	29	6	156	32	22	9.5	4	13.5	16	6.5
34.	27	5.10	162	31	21	9	4.9	13.9	15	6
35.	25	5.11	175	33	22	9.8	4.4	14.2	15	5.7
36.	30	6	180	30	23	8.4	4.7	13.1	15	6.2
37.	35	5.10½	180	33½	22½	7.5	4	11.5	14	6
38.	25	6 ¾	197	32	20	9.7	5	14.7	15	6
39.	28	5.10¼	176	30	22	10.5	4.8	15.3	16	6
40.	27	6.2	190	32	21	9.8	5.4	15.2	16½	6.3
41.	32	6 ¼	182	31	20	9.5	6	15.5	16.2	5.7
42.	25	6.2½	188	32	23	8.5	5	13.5	14.8	5.5
Average	28.3	5.11.9	178.6	31.6	21.6	9.22	4.81	14.04	15.35	5.79

TABLE IV.

No.	Age.	Height.	Weight.	Lat. D.	A. P. D.	M. L.	M. R.	T.	L.	A.
Groedel's average						8.5	4.7	13.2	14.2	
43.	33	5.10	198			9.5	4.5	14	13.5	5.5
Varsity	20.37	6.0.7	174	29.87	20	9.15	4.7	13.85	15.1	5.78
1918	18.6	5.11	170.4	29.52	19.34	8.98	3.98	12.96	14.57	5.14

average age in years of Groups I and II corresponded almost exactly to the totals of the average width and height of the heart. Further work must be done to establish the consistency of this relation, but the relation in these two groups is of interest.

SUMMARY AND CONCLUSIONS.

Tables are appended which show that there is very little difference in the size of the heart of men who have been rowing for two to four years and men who have been rowing over ten years. The hearts of these two groups are very slightly larger than the hearts of a younger group who have not as yet participated in serious competitive rowing. These differences seem to be explained by the differences in age and development. The only conclusion that can be drawn at this time from this particular study is that prolonged participation in rowing under the system now in vogue at Harvard University and the Union Boat Club of Boston does not materially increase the size of the heart when the heart is sound at the beginning.

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EXPERIMENTAL AND CLINICAL OBSERVATIONS ON THE BLOOD-PRESSURE IN SPINAL ANESTHESIA.*

BY GEORGE G. SMITH, M.D., BOSTON.

THE use of ether in urology has been attended by certain dangers, the chief of which resides in its effect upon the kidneys. It seemed, therefore, when spinal anesthesia was made practicable, that this method for urological cases would prove to be ideal. In many instances, such has been the case. In others, we have been distressed by the severe and alarming fall of blood-pressure which accompanied and was apparently due to this method of anesthesia.

In a number of our spinal anesthesias in which the blood pressure was followed, there was a marked fall, which in some cases amounted to 100 mm. of Hg. In several cases the blood pressure fell even below 45 mm. Hg., which was the lowest level recorded by the clinical apparatus. These extremely low pressures occurred only in a small proportion of spinal anesthesias; in most instances the blood pressure fell to 75 or 80 mm. Hg. Always with the more pronounced drops, and at times with the drops of moderate degree, the patient exhibited the signs of shock—namely, pallor, sweating, nausea, air hunger and a pronounced sense of uneasiness. The pulse always remained between 60 and 90, and did not increase in rate as the blood-pressure fell. The above mentioned signs appeared in from 10 to 20 minutes after the introduction of the drug, and passed off as the blood-pressure began to rise, which it usually did 10 to 15 minutes later. Several cases which had been through this rapid change of blood pressure had cardiac decompensation within 24 to 48 hours after operation, and although the influence of the operation (usually suprapubic prostatectomy) could not be disregarded, it seemed to us that the spinal anesthesia might well have been an important factor in disturbing a heart which was perhaps not in the best condition to go through such an ordeal. It is fair to say that none of the cases in which a minor operation or cystoscopy alone was done had cardiac decompensation afterwards. It may be that as most of the cases of this class were young men, their cardiovascular systems were better able to stand the fluctuations in blood pressure, whereas the older men, who had prostatectomies, were often in advanced arteriosclerosis.

However that may be, it is a fact that in a considerable percentage of cases the blood-pressure fell to a disturbing degree. Physiologists have found that in animals in which a blood pressure of less than 35 mm. Hg. is induced for more than 15 minutes, a number of nerve cells are actually killed from anemia and the consequent lack of nutrition. It is not unlikely that the very low pressures sometimes seen during spinal anesthesia contribute to post-operative shock through depriving the higher centers of their proper blood supply.

The occurrence of this fall in blood pressure in some cases seemed to us a danger grave enough to contraindicate spinal anesthesia in those very cases in which its use, from other points of view, was most desirable. With a view to finding out the cause of the low pressure, and if possible a means of preventing it, I took the question to Dr. W. T. Porter, and in the laboratory of comparative physiology of the Harvard Medical School we attempted to solve it through experimental methods.

The cat was the animal selected. Fifty were used, and as in many of them more than one experiment was done, we gathered records of 74 different injections.

The cats were lightly anesthetized and then stretched on the cat board. The carotid artery was exposed, connected with a membrane manometer, and a cannula was put in the trachea so that artificial respiration could be established. We found that the changes in blood pressure and the tests of anesthesia were so much influenced by muscular reactions that we could not tell for sure just what was happening, and if the cat became too deeply etherized the reflexes disappeared. Therefore, we abandoned the use of ether throughout the experiments and used curare alone. The animal was turned over on its belly and, as I found that it was impossible to

* Read before the New England branch of the Urological Association. A full report of this work appeared in the *American Journal of Physiology*, July, 1915.

get the needle into the dura with certainty without doing a laminectomy, in every case laminectomy was done. We are well aware that there are certain forces within the spinal sac which keep up the movement of the spinal fluid. It is known, for instance, that respiration tends to cause movements of the spinal fluid; this effect must have been more or less offset by these windows through the spine. Also in considering the effect of gravity, one must allow for the influence of atmospheric pressure when the tube is open at the end. We tried to make allowances for these sources of error, and we feel that the information obtained is substantially accurate. The needle was inserted through the dura and the fluid injected into the cerebro-spinal fluid at the lower lumbar region, where the cord becomes very small. In that region the needle can be inserted perpendicularly into the long axis of the cord. Higher up the needle has to be inserted more or less parallel with the axis of the cord, and the direction of the injection is thereby changed. We have endeavored to consider all these factors in noting the principles underlying the distribution of the drug.

Tropacocaine and novocaine, with and without adrenalin, were the drugs used. Adrenalin alone injected into the spinal canal was found to have no effect upon the blood-pressure.

The literature from 1900 to March, 1915, contained no conclusive work on the blood-pressure during spinal anesthesia. A number of writers mentioned the fall in blood-pressure, but attributed it to the effect of the drug upon the bulbar centers. In our experience with cats under ether alone, if the injection was made into the spinal sac below the phrenic nerves (5th cervical) and ascended to the medullary centers, respiration was always paralyzed. In the 125 cases in which spinal anesthesia was used on the genito-urinary service at the Massachusetts General Hospital, no case showed respiratory paralysis. The fall of blood pressure, therefore, cannot be attributed to the influence of the drug upon the bulbar centers.

It has been shown that the blood-pressure is dependent largely upon the condition of the blood vessels of the splanchnic area. The mechanism by which the pressure in this area is regulated consists upon its efferent side of three links: (1) the bulbar centers, (2) the efferent vasomotor tracts which run in the antero-lateral columns of the cord, (3) the vasomotor fibres which pass out with the anterior roots of the cord from the 5th dorsal to the 3d lumbar segments. (Howell: American Text-book of Physiology, vol. i, p. 206.)

In our experiments it appeared that all of these links of the vasomotor mechanism were susceptible to paralysis by novocaine. When, however, the drug is injected in the lumbar region, as in spinal anesthesia, its effect as it diffuses throughout the spinal fluid is felt first and chiefly by the vasomotor fibres of the anterior roots.

Several typical experiments are illustrated by the accompanying figures, the legends of which contain the essential facts. (Figs. 1, 2, 3, 4.)

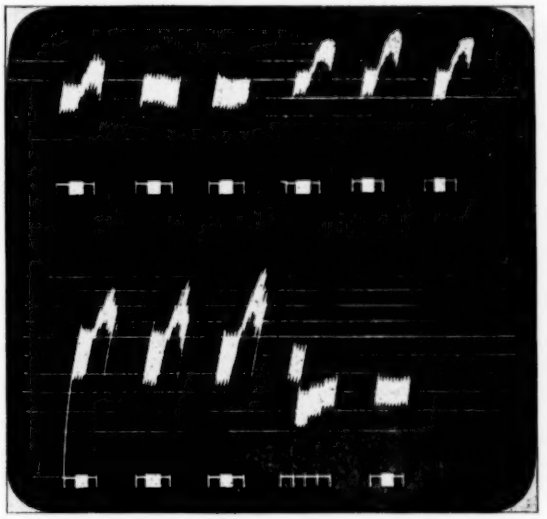

FIG. 1.

Experiment 45, Feb. 26, 1915. Cord exposed at L. VII and D. XI. Curarized cat. Scale 50, 70, etc.

1 c.c. of 1% Novocaine and Ad. "C" at L. VII at 12.22 P.M. causes fall of blood-pressure from 100 mm. to 55 mm. in three minutes. Diminution of brachial reflex and paralysis of dorsal columns at D. XI.

LOWER CURVE—LEFT TO RIGHT.		UPPER CURVE—LEFT TO RIGHT.	
1. Sciatic	12.10 P.M.	1. Brachial	12.34 P.M.
2. Brachial	12.14	2. Lumbar VII..	12.37
3. Lumbar	12.15	3. Dorsal XI....	12.39
4. Blood-pressure at	12.17	4. Sciatic	3.25
	12.22 Injection	5. Lumbar VII..	3.27
	12.25	6. Dorsal XI....	3.29
	12.28		
	12.31		
5. Sciatic	12.32		

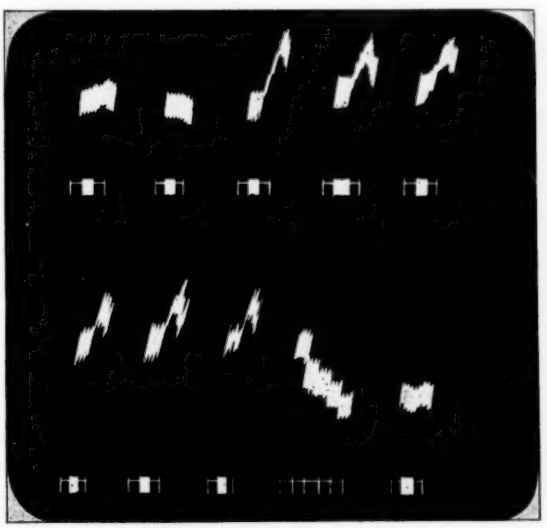

FIG. 2.

Experiment 46, March 4, 1915. Cord exposed at C. II and D. II. Curarized cat.

0.2 c.c. of 5% Novocaine and Adrenalin "C" at C. II towards the head at 9.49 P.M. causes gradual fall from 110 mm. to 60 mm. in 12 minutes with paralysis of sciatic, brachial, and cervical II. Lateral surface D. II gives response. This experiment proves that the dorsal column in the cervical region are paralyzed, but that the vasomotor mechanism below the paralyzed segment is not affected.

LOWER CURVE—LEFT TO RIGHT.			UPPER CURVE—LEFT TO RIGHT.	
1. Sciatic	9.40 P.M.		1. Brachial	10.05 P.M.
2. Brachial	9.43		2. Cervical II...	10.07
3. Cervical II.....	9.46		3. Lat. Surf. D. II	10.12
	9.48		4. Sciatic	11.40
	9.49	Injection	5. Brachial	11.43
	9.52			
4. Blood-pressure at	9.55			
	9.58			
	10.01			
5. Sciatic	10.03			

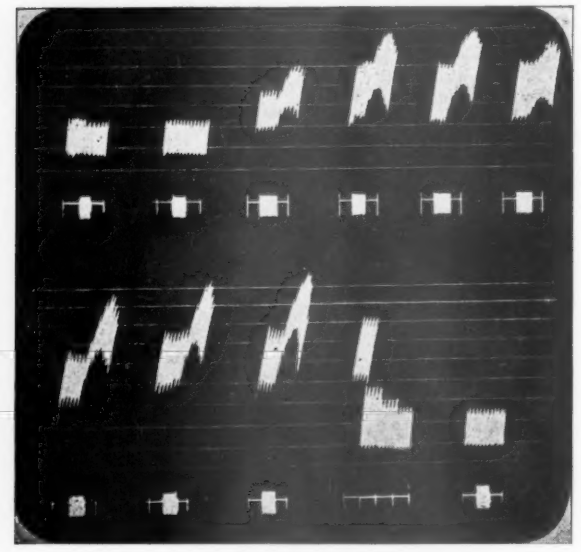

FIG. 3.

Experiment 43, Feb. 19, 1915. Cord exposed at D. VI. Curarized cat.

0.2 c.c. of 5% Novocaine and Adrenalin "C" at Dorsal VI at 9.03 P.M. causes a fall in blood-pressure from 110 mm. to 45 mm. in three minutes. Paralysis of Brachial and Dorsal VI. Scale 30, 50, 70, etc.

LOWER CURVE—LEFT TO RIGHT.			UPPER CURVE—LEFT TO RIGHT.	
1. Sciatic	8.55 P.M.		1. Brachial	9.15 P.M.
2. Brachial	8.58		2. Dorsal VI....	9.17
3. Dorsal VI.....	9.01		3. Brachial	9.42
	9.02		4. Brachial	10.12
	9.03	Injection	5. Sciatic	10.14
4. Blood-pressure at	9.06		6. Dorsal VI....	10.15
	9.09			
	9.12			
5. Sciatic	9.13			

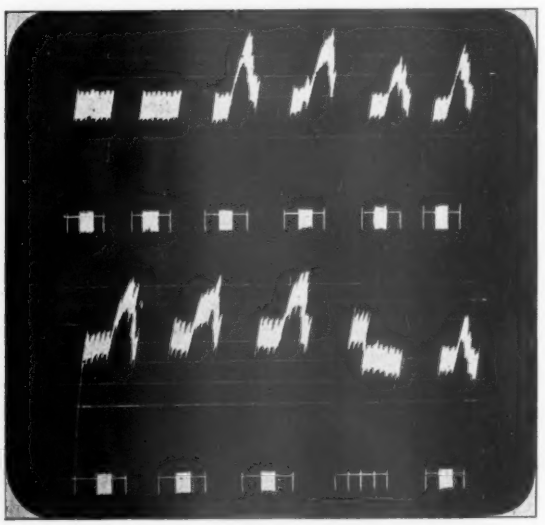

FIG. 4.

Experiment 42, Feb. 16, 1915. Lumbar VII and Lumbar I exposed. Curarized cat. Scale 70, 90, 110, etc.

0.2 c.c. of 5% Novocaine and Adrenalin "C" at L. VII at 9.22 P.M., causes fall from 120 mm. to 95 mm. and incomplete paralysis of sciatic nerve; 18 minutes after injection the board is tilted and complete paralysis of sciatic follows. L. I not paralyzed.

LOWER CURVE—LEFT TO RIGHT.			UPPER CURVE—LEFT TO RIGHT.	
1. Sciatic	9.11 P.M.		1. Sciatic	9.48 P.M.
2. Brachial	9.13		2. Lumbar VII..	9.49
3. Lumbar VII.....	9.15		3. Lumbar I....	9.51
	9.17		4. Brachial	9.54
	9.22	Injection	5. Sciatic	10.22
4. Blood-pressure at	9.25		6. Lumbar VII..	10.25
	9.28			
	9.31			
5. Sciatic	9.33			

As a result of our work, the following conclusions may be drawn:—

1. The blood-pressure can be lowered as much by spinal anesthesia as by section of the cord in the cervical region.

2. The greatest fall was caused by injection of the drug in the thoracic region, where the vasomotor fibres which supply the splanchnic area leave the cord.

3. This part of the vasomotor mechanism is the first affected by the drug when the injection is made in the lumbar region.

4. The extent of diffusion of the drug within the dural sac appears to be influenced more by the bulk of the solution injected than by any other one factor.

5. A given amount of drug in a concentrated solution diffuses less and consequently lowers blood pressure less than does the same amount of drug in a more dilute solution.

6. The greatest effects upon blood pressure were noted when adrenalin was combined with novocaine.

7. Entire fixation of the drug does not take place within 20 minutes after the time of injection.

8. When a solution of greater specific gravity than spinal fluid is used, the extent of diffusion may be increased by gravity.

9. Attempts to raise the blood pressure by the intravenous injection of pituitrin or adrenalin gave only a very transient rise.

Clinical Department.

PITUITARY EXTRACT AS HEMOSTATIC IN HEMORRHAGES OF THE LUNGS.

BY M. J. KONIKOW, M.D., BOSTON.

In the ever-increasing literature on the pituitary extract and its action, we have not come across a single case where this extract has been used as a hemostatic in severe hemorrhages of the lungs. True, Bab[1] reports its action as gynecological stypticum, while Étienne,[2] Hamburger,[3] Lewis,[4] Klotz[5] and many others dwell upon its action on the blood pressure. The latter recommends it especially in uterine hemor-

rhages due to postpartum atony of the uterus. He also thinks it may be of value in other hemorrhages dependent upon a low vasomotor tone, although he has no personal experience with its use in such conditions. Wiggers[6] and Pal[7] observe its constrictive action on peripheral blood vessels, thus producing a marked rise of arterial blood pressure. But a definite mention, to our knowledge, of the use of this extract in hemorrhage of the lungs is lacking. This in our opinion should serve as a sufficient justification in reporting the following case:

S. F., druggist, 32, married, two children.

Family History. Negative.

Previous History. When a child of six, had a long-standing cold abscess on the left side of the chest, which eventually emptied itself in two places, and left two considerable scars with some retraction of the left chest wall. Had his first hemorrhage from the lungs 13 years ago, from which he recovered in a few weeks. Three years ago had another hemorrhage with same good results. During these three years patient was working hard, stayed late hours in his store, had little sleep and irregular meals, with very few chances for outdoor exercises.

On June 2, 1915, he was overtaken with a severe hemorrhage and had to be carried home in a taxicab.

Examination. On my arrival I found him in bed, still coughing up and spitting considerable blood. Pulse was rapid, easily compressible, 104 per minute. Any further examination, in view of the conditions, was postponed for a future time. Ice was ordered internally and externally. In the absence of morphium, it occurred to me that pituitary extract might be a good substitute. One c.c. of "pituitary liquid" (prepared in one c.c. ampoules, each supposed to contain 0.2 grams of the fresh posterior lobe of the pituitary body of the ox) was injected hypodermically.

The result was magical. Within ten minutes the pulse dropped down to 76, it became less compressible, the heart slowed down in its action, the patient was coughing up less and less blood, and at the end of 30 minutes he was expectorating only slightly colored sputum.

Consequent History. For four days patient was spitting blood only in the mornings, in very slight quantities, about the size of a pea each time. In about ten days patient felt so good, that he ventured to go down and up two flights.

Another hemorrhage occurred. Similar condition of the pulse and heart found. Again "pituitary liquid" was used with the same excellent results. A week after a third hemorrhage occurred. In my absence another physician was called in. Codeine in 1/6 of a grain doses was given per mouth. I saw the patient sixteen hours after this attack. He had the worst attack he ever had, and the hemorrhage at the time of my examination was still continuing. Every cough would produce a mouthful of blood. His pulse was very weak and rapid, heart beats accelerated, at times irregular. A hypodermic injection of the same "pituitary liquid" was administered, and, in view of a threatened collapse, followed by 1/30 of a grain of strychnin. Patient responded quickly in the same manner. He made a steady recovery and is at the time of this writing enjoying a country vacation.

SUMMARY.

This case suggests that in pituitary extract we have a powerful hemostatic in pulmonary hemorrhages. The *modus operandi* here is probably based upon the same principle as its action on the uterus as an oxytocic. In both cases the results are due to the constrictive action on the peripheral blood vessels, in the first instance checking by it the hemorrhage, in the second instance producing by it a temporary anaemia of the uterine muscles, which in its turn causes their contractions.

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Reports of Societies

NEW ENGLAND BRANCH OF THE AMERICAN UROLOGICAL ASSOCIATION.

Winter Meeting Held March 30, 1915, at the Harvard Club, Boston, Mass.

President, Dr. A. L. Chute, Boston.
Secretary, Dr. R. F. O'Neil, Boston.

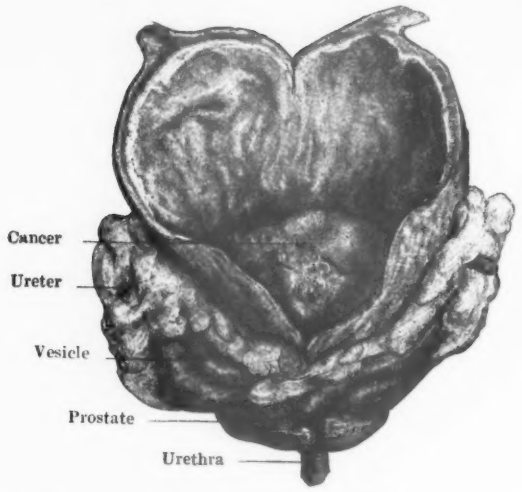
PRESENTATION OF SPECIMENS, INSTRUMENTS, AND REPORTS OF CASES.

A CASE OF TOTAL CYSTECTOMY FOR MALIGNANT DISEASE OF THE BLADDER.

Dr. A. H. Crosbie, Boston: I have here a specimen of a bladder that I believe will be of interest to you. It is from a man fifty-seven years of age, whose symptoms began four months before he presented himself, and upon whom I did a total cystectomy because of a malignant growth involving the region of the right ureter. This man showed nothing characteristic in the way of symptoms, just a turbid urine with frequent and painful urination.

Cystoscopic examination showed that his symptoms were due to a tumor about the size of a small hen's egg, involving the right ureteral region and orifice. Not only did this mass which had the appearance of a malignant mass, involve the region of the right ureter, but it extended so near to the bladder outlet as to make any partial cystectomy, even with transplantation of the ureter, seem out of the question. Therefore, total cystectomy was decided upon.

At the first operation, which was done three weeks before the cystectomy, I did a double lumbar ureterostomy, allowing three quarters of an inch of



the ureter to project beyond the surface of the loin. The right ureter was found very considerably dilated at this time, and the urine slightly turbid. The patient suffered from two attacks of pyelonephritis of moderate severity during the interval of three weeks between the ureterostomy and the cystectomy. This interval between the operations was determined upon, because in another case of double ureterostomy on the urinary service at St. Elizabeth's Hospital it was found that the patient suffered from repeated attacks of acute pyelonephritis following operation, in fact, died of this cause. I therefore wished to wait until this patient developed a certain immunity in this regard. The ureters during this time swelled up very considerably and a considerable part of one of them sloughed away, due, I believe, to cutting off the blood supply with the stitch with which I anchored this ureter to the skin of the loin.

On March ninth the urethra was exposed through a transverse perineal incision, cut across and freed up to the general region of the prostate. The incision was packed lightly, the patient put in the dorsal position with his pelvis slightly raised and a median abdominal incision made. The perivesical space was opened without opening the peritoneum and then the peritoneum was gradually pushed back until I was able to expose the back of the bladder to the point where the ureters entered it. They were tied and cut on both sides. The pubocystic ligaments were then cut and some bleeding points tied. After the seminal vesicles and prostate were dissected free from the rectum, I found I had reached the point to which I had worked up through my perineal incision. The bladder was then wholly separated from its attachments. A large tube was carried out through the perineal wound to drain the pelvis. Other tubes were introduced from above and the wound closed.

The patient has made a very good convalescence and is now practically ready to go home. There have been one or two attacks of pain low down in his left side, accompanied with temperature, that I think may be due to a little section of ureter that was allowed to remain on that side.

As I see them, the important points of this operation, which is as yet uncommon, are these:

One should allow the end of the ureter to project beyond the skin of the loin some little distance. This certainly helps in fitting a collecting apparatus. It may be an element in lessening the stenosis of the new ureteral outlet.

A considerable interval, we believe, three weeks or more, should elapse between the ureterostomy and the cystectomy. This is because pyelonephritis is almost sure to occur following ureterostomy, and this added to as serious an operation as cystectomy will prove fatal to a considerable number of these patients. The patients develop a certain immunity after the first severe attacks.

The operation, to my mind, should be done by the combined perineal and abdominal routes. In this, one begins below and dissects the urethra free as high as the prostate; one then begins above and carries the dissection down all about the bladder until he meets his first incision. If this dissection can be carried out without opening the peritoneum, it lessens the danger.

I believe that I left a small section of ureter on this patient's left side. It would be interesting to know whether the attacks of pain with temperature and local tenderness referred to this region were due to this little piece of ureter. If so, it would indicate the importance of removing it all at the time of operation.

DISCUSSION.

DR. J. B. BLAKE, Boston: Did you have any difficulty with the openings of the ureters,—was there any tendency toward stricture?

DR. CROSBIE: Not a bit. The right ureter I made out at the time of the operation was very much dilated, about the size of the thumb, and probably practically no urine was getting through from the right kidney into the bladder. Since the operation it runs freely on the right side.

The urine was of low specific gravity and has contained pus all the time. It had first a specific gravity of 1001 and it now is 1005. Apparently the right kidney is getting back some of its function.

DR. F. S. WATSON, Boston: I am afraid I have spoken already far too often upon one of my favorite projects, which is again suggested by the case just reported by Dr. Crosbie, but if you will forgive me, I will say just a word with regard to it once more.

Dr. Crosbie has followed the example of all but one or two of those who have adopted the plan of doing total cystectomy, which I proposed in 1905 for the first time. That is to say, he has adopted the most important part of my plan, which is that of dividing the operation of total cystectomy into two stages, but has substituted ureterostomy in the place of bilateral nephrostomy which I originally counselled as being preferable to it.

I received a letter from a gentleman in Philadelphia not long since, who tells me that he has followed my plan as it was proposed and that he has had a very successful result with it. His patient was operated on one year ago and is in good condition up to this time. This is almost the only case in which the bilateral nephrostomy, which I urged to be done as the preliminary operation in order to divert the urinary secretion before attacking the operation of total cystectomy, has been done, so far as I can learn.

My preference for the nephrostomy preliminary operation was based upon the knowledge that we had at that time, and have still today, that the kid-

ney is less liable to become infected with the broad, direct, free drainage that it offers, than it is in connection with the operation of ureterostomy, and, moreover, if infection does occur in the presence of well arranged and sufficiently free nephrostomy operations, it does not result harmfully to the patient, or in any case it is far less likely so to result than is the operation of ureterostomy, the drainage channel supplied by which is liable to become narrowed or occluded by adhesions, by bends in its course, and is in any case less free than is that of the nephrostomy drainage.

Both of the operations are easy of performance in the great majority of cases. I have always fancied that the preference for the ureterostomy was owing to its being the more readily performed of the two, which it is in my experience.

I am gratified however, to know as experience accumulates in the performance of total cystectomy in two stages as I advised and in the abandonment of the rectal implantation of the ureters in connection with it, which was the usual method employed formerly, that my prediction, that the mortality of total cystectomy would be greatly lessened if my plan were adopted, has proved true. In so far as the operative mortality is concerned, I have not seen reported as yet an operative death since the two-stage method has been put in operation. I still cling fondly to my preference for nephrostomy instead of any form of ureterostomy, but so far as this feature of my plan is concerned, I am open to conviction, and will gladly yield this point of the plan if I shall be proved to have been mistaken in the view I took of it.

I have shown the patient to this association on one occasion who has been wearing the apparatus which I devised for receiving the urine flowing from bilateral permanent renal fistulae. I will merely add now that he is still in excellent health in the eighteenth year following the first operation which was done.

Dr. H. Cabot, Boston: We have had a little experience with the question raised by Dr. Watson as to the preference being given to nephrostomy over ureterostomy. I did three cases of nephrostomy and then I abandoned it, I will frankly say because mine were not successful. The results to the kidney were so certain and so absolutely damaging that I had to abandon it. My difficulty was this—the kidney under reasonably normal conditions is a very movable organ. The tube placed in the kidney is very apt to become fixed. As a result it becomes withdrawn from the renal pelvis and extensive, damaging and general infection of the kidney will occur. That has been the difficulty which I have been unable to overcome, the accurate fixing of the tube in a normal renal pelvis. There is no difficulty in a dilated renal pelvis. Therefore, the mere management of a nephrostomy with a normal kidney has seemed to me highly difficult on its technical side. If you do get efficient drainage of the renal pelvis through the kidney substance, the future integrity of the kidney is better secured than by ureterostomy, but I have been unable to carry it out technically.

Ureterostomy is open to the objection that it opens the lymphoid channels to the kidneys by the ureter. It is demonstrated experimentally and clinically with us with considerable regularity. Our prettiest case was a man in whom ureterostomy was done for cancer. After ten days a little redness of the skin about one ureter was observed. From that a colon bacillus was obtained. Two days later he had fever and colon bacilli were obtained from the corresponding kidney, demonstrating the ascension of the process in the wall of the ureter. This has been demonstrated also with the coccus, though I think the bacillus follows the lymphatics more readily than does the coccus.

If a technique can be worked out that will satisfactorily drain the renal pelvis through the kidney, I believe that Dr. Watson's position will be entirely secure.

Dr. R. F. O'Neil, Boston: In line with Dr. Crosbie's case I should like to mention again the case I reported at the last meeting. A case of malignant disease of the bladder in which double ureterostomy was done as a palliative measure for the relief of urinary symptoms. The second operation of removal of the bladder could not be done, as I was able to demonstrate at the first operation that the disease had gone beyond the bladder and the glands along the spine were involved.

There was no difficulty whatever about the ureterostomy. The ureters were exposed at the pelvic brim, freed towards the bladder and up to the kidney. They were divided low down. The lower end ligated and the upper brought out through a stab-wound in the back at a point previously marked. These were left protruding about one and one-half inches beyond the skin. They did not slough, and five weeks later were trimmed off close to the skin. Immediately following this a colon bacillus infection of the right kidney occurred. This ureter was dilated as a result of the pressure of the growth and was, I think, cut off a little too short. The infection subsided but never disappeared. The ureterostomy worked well up to the patient's death from his disease, a few months after the operation.

Dr. A. L. Chute, Boston: In regard to these two operations, nephrostomy and ureterostomy, I recently have had a case of each. The first was a woman of thirty with an absolutely destroyed, tuberculous kidney on her right. On her left she began some weeks before to have attacks of colic with vomiting and later, signs of uraemia. A thickened ureter could be felt below, on her left. The urine was very pale, but that taken from the left pelvis showed little change. It was my opinion that I had to do with an ascending, urinary tuberculosis on the left side; that this process was beginning below with a thickening of the ureter which was so increased at times as utterly to shut off her urine, causing an obstructive anuria. During these attacks she had first colicky pain and temperature due to the obstruction, and later, vomiting, headache, etc., due to the toxemia. I could see nothing to do to relieve her but to do a nephrostomy, which I did, in May or June of last year. She came into the hospital within a week rather used up following an influenza. She has improved in color, in appetite and in weight. She has had no further attacks of colic or vomiting. Her loin sinus is of little trouble during the day, but at night we have as yet devised no satisfactory means of keeping her dry. As yet there is no sign of any decrease in size or increase in the lumen of the diseased ureter. I had hoped that the complete rest given the ureter, so far as function is concerned, would lead to improvement so far as the tuberculosis was concerned; but there is no evidence of this as yet.

The double ureterostomy was done about two

months ago on a woman in her fifties. This was intended as preliminary to a total cystectomy for cancer of the bladder. The patient had considerably dilated ureter on one side. She had a sharp pyelonephritis following operation and then faded away, dying about two weeks after the operation.

DR. G. G. SMITH, Boston: I might say just a word about the nephrostomy to which Dr. Cabot referred.

The difficulty there was, that I did not get the tube clear into the pelvis of the kidney. On one side it was all right, but on the second side I was in too much of a hurry. I think I stripped the mucous membrane lining the pelvis so that my finger seemed to be in a free cavity, whereas, it really was not.

Autopsy showed that the tube on that side went through the cortex and then lay occluded by mucous membrane so that it did not drain the pelvis at all. There were focal abscesses in the kidney. I think that is probably the reason the man died.

A CASE OF DIVERTICULUM OF THE BLADDER.

DR. J. D. BARNEY, Boston: The specimen I wish to show you is that of a diverticulum of the bladder, interesting because of its unusually large size. It was from a colored man of 56 years old. He was referred to me early last February, with the story that up to last January he had had no urinary difficulties of any sort. He had a long venereal history. In January he had sudden acute retention, and from that time until I saw him he had had to be catheterized frequently. His bladder was distended up to the umbilicus. With a soft rubber catheter I drew off about three pints of urine like pea-soup, loaded with pus and blood. I tried to cystoscope him, but had much difficulty getting the instrument into his bladder. There was some bleeding, and I could put fluid in but could not get it out. This made me suspicious that I might have gone through his bladder into the peritoneal cavity. Such was not the case, for, after removing the cystoscope, I was able to empty the bladder fairly well by a silver catheter.

I sent him to the hospital and made two or three more attempts with the cystoscope, but with little success; all I could see was a red blur, and the passage of the instrument as well as the removal of fluid from the bladder was very difficult. Finally, I introduced a silver catheter and found that it went readily into a large cavity in the median line which I could empty and wash out easily. In the meantime, we had noticed a smooth, round, firm mass the size of a grape fruit, low down on the right side of the pelvis. By withdrawing the catheter I was able, after a little manipulation, to pass it into this second cavity from which I was able to draw off about fourteen ounces of thick, dirty urine. After emptying this sac, I could feel a distinct grating of calculi. I made a diagnosis of diverticulum, with calculi, but could not gather any more information from an x-ray.

Operation was performed with gas-oxygen anesthesia. I opened the bladder suprapubically and found an opening on the right side, rather high up, which admitted my forefinger. This cavity had apparently not been drained, in spite of the fact that we had tried almost for a week with various kinds of constant drainage apparatus. I packed the cavity tightly with gauze, pushed back the peritoneum and dissected it out entirely extra-peritoneally. This was not difficult, except in spots where there were firm adhesions, especially low down against the pelvic wall. Previous to this I tried to find the ureteric orifice on that side but could not. During the dissection the ureter showed up, lying between the diverticulum and the bladder, and I had no trouble with it. It emptied normally into the bladder. Having dissected the diverticulum down to a small neck connecting it with the bladder, I cut this off and closed the opening with a double row of sutures.

Convalescence was uneventful, and the suprapubic wound was closed. The urine was quite clear, but unfortunately the patient can urinate only an ounce or two, after which twenty or thirty ounces can be withdrawn. This retention seems to be a not unusual occurrence as a result of a diverticulum; probably owing to a lack of tonicity.

It may be that the retention is due to an enlarged prostate. I noted at the operation that his prostate was slightly enlarged, but as he was having all that was good for him, I decided not to take it out. Whether the removal of his prostate will relieve his difficulty remains to be seen. We are inclined to let him go home to see how things will work, instructing him to catheterize himself when necessary.

The specimen which I will show you was stuffed with cotton and then hardened in formalin. A small piece was taken out for examination. We have no detailed report as yet, but there appear to be two or three muscle layers which would indicate the congenital origin of this diverticulum.

DISCUSSION.

DR. F. S. WATSON, Boston: I feel inclined to congratulate Dr. Barney because of his having refrained from disturbing the prostate when he removed the diverticulum of the bladder which he has shown us. I say this because of a singular and so far as I can learn unique experience of mine in which the prostate and a diverticulum played the principal parts. The truth of the statements I shall make about it will be vouchsafed by Dr. Blake who was with me when I did the operation.

The incident was as follows: I was doing a perineal prostatectomy one day, and had reached the point of the operation when the prostate, which I should have said was not a very large one, was enucleated and lying free within its sheath. I was about to draw it toward the outer wound with my finger tip when it slipped from under it and fell into the bladder. This did not disturb me, because I knew that I could readily seize and withdraw it with a pair of forceps. I put the blades of the forceps into the bladder and began my search for the gland. I continued it for five full minutes without finding the runaway anywhere within the bladder. I put my finger into the bladder and four minutes' unavailing search was added to that which had preceded. I diligently, but with lowered spirit, then examined the rectum. I became convinced that I was the victim of witchcraft. However, I once more made a digital exploration of the bladder and as I was again about to retire from it profoundly discouraged, the tip of the finger slipped into the mouth of a diverticulum. Within it, snugly ensconced lay the wandering prostate. After some trouble I succeeded in seizing it and extracting it from its lair. The episode was closed.

DR. R. F. O'NEIL, Boston: Was the Wassermann reaction done?

DR. BARNEY: We went all over the venereal history, and it was negative.

A VESICAL CALCULUS FORMED ABOUT A LIGATURE FOLLOWING AN OPERATION FOR HERNIA.

DR. A. L. CHUTE, Boston: I have here a bladder stone which I removed yesterday. It has a piece of ligature attached. It was found, not at the base of the bladder, where one ordinarily sees stones, but well up on the lateral wall. The patient, a man of thirty-five, had a hernia operation two years ago and following this he had urinary symptoms, pain, frequency of urination, and at times a slightly bloody urine. He was seen by one or two men who felt sure his symptoms were due to prostatic trouble. They made cystoscopic examinations but evidently examined only the trigone, which in this case was not the most important part, for I found this stone clinging well up on the right lateral wall. Its position at once stamped it as either a stone formed on a ligature, or one held in a diverticulum. The history of an operation made the former the more probable. When I opened his bladder yesterday, the stone was held definitely in place. Finally I hooked into the little loop of thread and broke it so that I could pull the rest of the loop out, and removed the stone which, you will see, is formed about a bit of linen thread.

It is the second stone of this sort that I have seen. They bring up an interesting question as to whether these ligatures on which they form penetrate the bladder wall at the time of operation, or whether they migrate into the bladder later, as foreign bodies occasionally do. My feeling has been that these ligatures probably migrate into the bladder. Most men, I think, do not agree with me, but feel that the suture penetrates the bladder at the time of operation. Which is right I do not know.

DR. G. G. SMITH read a paper entitled "Experimental and Clinical Observations on the Blood Pressure in Spinal Anesthesia."*

DISCUSSION.

DR. C. O. COOKE, Providence: I should like to report a case of spinal anesthesia in which there was a fall in blood pressure of 155 m.m. The patient, a man of 65 years of age was operated on for stones in the bladder. The blood pressure before administration was 225 m.m. He was given 6/100 gram stovain and 6/100 gram glucose. Three minutes afterward, the man became unconsicious and began to snore as if under general anesthesia. The blood pressure was 70 m.m., a fall of 155 m.m. in three minutes. It remained around 70 to 90 for 50 minutes, then gradually began to rise. In one hour and 15 minutes it had reached 140. The patient after that had no untoward symptoms. He was given 1.2 c.c., of this solution, which would be 6/100 gr. of stovain and 6/100 grams of glucose.

DR. H. CABOT, Boston: In regard to clinical knowledge, there are certain facts which seem to me clear, but on which I think we want further data. It has been striking in my personal experience that the comparatively young individuals to whom spinal anesthesia has been given for operations on the extremities or on the perineum including cystoscopy, have all done extremely well. The blood pressures which have been done in a number of these cases have not shown very great drops. The older individuals, particularly those upon whom operations have been done above the symphysis, have shown the great drops in blood pressure and have given the outward and visible evidence of shock. I have been unable in my own mind to avoid the conclusion that these great drops bear a direct relation to the condition of the arteries, being related either to arteriosclerosis or to a weak heart, or both. The explanation of that I am not prepared to give, unless it be that the compensating mechanism which avoids the over distention from paralysis from the splanchnic vessels is better managed by those with limber vessels than those with stiff vessels. That explains why a large group of cases, chiefly gynecological, have uniformly done well, and why a group of our cases, for instance, of prostatectomy on people of advanced life, have done badly.

Dr. Smith has carried this work a little farther than I have seen it carried before, and it seems to me an extremely valuable piece of work in a field where we have been groping in the dark, where there has been tendency to publish good results and withhold bad ones. I do not think spinal anesthesia is either highly desirable or highly undesirable, but I think we shall come to rely on it as a safe anesthesia in certain cases.

DR. E. L. YOUNG, JR., read a paper entitled, "A New Preparation for Pyelography Illustrated."†

DISCUSSION.

DR. H. BINNEY, Boston: After having read last year about the use of silver iodide, I did some experiments of injecting the kidney pelvis in rabbits, using a 5% suspension of silver iodide in albolene. Examination post mortem showed at varying numbers of days after injecting no evidence of irritation and the material passed out of the pelvis pretty rapidly. I later tried a suspension in an emulsion of quince seed suggested by the originator, and found, as Dr. Young says, that it becomes contaminated by fungus growth, and oxidized. I did not try it on a human subject as it seemed unwise with such a thick preparation.

I congratulate Dr. Young for having worked out such a satisfactory preparation.

DR. CHUTE: I have the pleasure of introducing to you Dr. Paul W. Pilcher of Brooklyn, N. Y., who will read a paper entitled, "Transvesical Prostatectomy. A Discussion of Some Unsettled Points in the Preparation for and the Technic of the Operation."‡

DISCUSSION.

DR. W. W. TOWNSEND, Rutland, Vt.: I would like to ask Dr. Pilcher if he would go a little into detail with regard to the estimation of the leakage through the drainage tube.

DR. PILCHER: In suturing the Pezzer catheter into the suprapubic wound, it is found that there is no leakage around it and that all the urine is passed through the Pezzer catheter; therefore, any test of renal function may be made and the entire amount of urine passed in a given time collected and an accurate test made.

DR. G. G. SMITH, Boston: What anesthesia do you use?

* See JOURNAL, page 502.

† See JOURNAL, Vol. clxxii, p. 539.

‡ See JOURNAL, page 494.

DR. PILCHER: The preliminary operation is done under novocain anesthesia. The second operation is done under ether anesthesia given by the drop method with infiltration of the prostate and urethra with the novocain solution.

DR. H. CABOT, Boston: I do not want to let this occasion pass without making some comments. Dr. Pilcher seems to me to have carried farther than anybody else that I know, certain steps of this two-stage operation. The two-stage operation (I don't know where it originated), as it was commonly done by a good many men consisted of opening the bladder and leaving the patient soaking wet for two or three weeks. Now this operation of Dr. Pilcher's is on an entirely different basis and interested me because I think it should be compared with the cases which we drained above the bone by puncture, which was described with illustrations by Dr. Wishard in 1888, and has been used by him ever since.

This, it seems to me, has some of the advantages of Dr. Pilcher's procedure. It enables you to get suprapubic drainage through a good size catheter. It does not give the walling off of the tissues so that secondary infection will not take place. We have used that procedure in a small number of cases, almost entirely those which have over-distended bladder, in which the urine is uninfected, and in which we dislike the certain infection following urethral drainage. These we have punctured and put in a catheter, and later, at the time selected very much as he does, have operated by an ordinary suprapubic operation. The only flaw in these cases is that they heal slowly. I confess that with some of the patients that we see, I fear that my abbreviated fingers would be unable to reach the prostate. Some of them have an abdominal wall about four inches thick. Perhaps I could borrow an extension from Dr. Pilcher. This preliminary walling off of the tissues introduces an element which I have never before seen mentioned, and it seems to me interesting.

Again, Dr. Pilcher's paper brings out that bad time, about four or five or six days after beginning drainage, with everything going down. I have come to believe that that represents acute pyelonephritis generally with the colon bacillus, a phase through which most of these patients have to go, and it seems the thing which we achieve by our drainage. This sounds ridiculous but it is true, and it produces an immunity which protects him. This immunity is probably short-lived. It has been our experience that we could demonstrate the onset of this infection in the urine, and the slow at first, then rapid, decline of the kidney function as the infection in the kidney takes hold and develops. Whether or not there is any avoiding that process of voluntarily infecting the kidneys and letting them secure their own balance is an interesting point to be developed in the future. If there is any way by which we can protect these patients against infection, it seems to me it would be interesting. I shall be tempted to try this two-stage method of Dr. Pilcher's.

DR. J. W. KEEFE, Providence, R. I.: I have had some experience with this two-stage method advocated by Dr. Pilcher, and I can say that I have been very much pleased with the progress of most of the cases. I have used the local anaesthesia during the primary operation, novocaine about 1/400 and adrenalin. I have felt that the combination was a little bit better than the novocaine alone.

It is just as Dr. Pilcher has said,—when you use a Pezzer catheter you can have all the urine passed into a bottle either attached to the dressing or placed at the side of the bed. In a few cases I use the ordinary drainage tube, but I do think the Pezzer catheter is more desirable.

It is important not to introduce your tube very far into the bladder. If it goes but a short distance into the bladder there is much less irritation.

I was quite surprised to find how readily one could, after the wound was partially healed, pass a finger through, where the drainage tube was, and enucleate the prostate, and then with a small stone forceps grasp the prostate and remove it.

My experience in prostatic work has given me an opportunity to try several different methods. First, from doing most of our work through the perineum and doing median perineal operations we remove the prostate by that route. Then I saw Dr. Young do some of his work, and I concluded that that was a very good way. In some cases it worked beautifully. Then I saw Dr. Mayo do some of his perineal prostatectomies, using his knife to make an incision through the mucous membrane. There are types of cases where that works very well, and it was surprising to see him, after doing a hard day's work, at the close of the day do a couple of prostatectomies in a very short time. In former times when we had those large wounds following suprapubic operations, and we found the wound sloughing and encrusted with phosphatic material, I had the impression that the suprapubic operation was a pretty serious matter, but as the suprapubic operation is done today according to this method of Dr. Pilcher, where you open your bladder and put your catheter in and close it properly, you have a different problem.

Dr. Cabot is just right about what he said with reference to the patient becoming immune. I think when we make this incision in our suprapubic primary operation, the patient does get a certain reaction from that, and I think we really do immunize the patient. So when we go in the second time to enucleate our prostate I think the patient is in a better condition to withstand the trauma. It seems at times one could enucleate the prostate at the first operation so easily that there is a temptation to do it. In one case I think of, which should have been a two-stage operation, we concluded we would take it out in the first stage, and got away with it.

Some years ago I opened the bladder by mistake in doing an abdominal operation, and the other day I opened the peritoneum in doing this first stage operation and it seemed to me that it was not possible to do it. So I was glad to see that Dr. Pilcher had clearly drawn out the fact that the peritoneum can be very near the pubic bone. In this particular case, the peritoneum bulged up so that it was very prominent.

We must bear in mind that we must not criticize the other fellow too much, but I have been impressed with the fact that Dr. Pilcher is on the right track.

DR. J. H. CUNNINGHAM, JR., Boston: I do not remember having heard a paper on the subject of prostatectomy that has held my interest more than the one Dr. Pilcher has given tonight. The various features that he has spoken of are all practical steps, and the reasons for their employment seem to me sound in every particular. The method of suprapubic drainage with the Pezzer catheter is one that I have employed for several years and to my mind

is the ideal method. The preoperative charts are most interesting and instructive. I think we have all observed the clinical features which they graphically portray, and I believe such charts are of much value. The Hagner bag with a catheter passing through it appeals to me strongly, for being one who still does the perineal operation, I have been working on this same idea to control haemorrhage and still have perineal drainage. This modification solves my problem.

DR. G. A. MATTESON, Providence, R. I.: I wish to simply mention a means of extemporizing a Hagner bag by taking a glove finger and attaching it to a rubber catheter by means of an elastic band. This seems very thin, and insecure on account of its thinness, but I have found by testing that it stands all the pressure that is necessary, and serves the purpose very satisfactorily. I have used it in several instances with entire success.

DR. A. L. CHUTE, Boston: I want to express my appreciation of Dr. Pilcher's paper, in which I have been especially interested, since I have been impressed with the importance of doing these preliminary operations for some time. I don't feel, however, that a preliminary cystotomy is nearly as important as Dr. Pilcher does, in that I do not believe it is necessary in all cases. I think that when you need to drain these cases as a preliminary step, when there is a question of renal sufficiency, it is wiser to open them up widely and establish adequate drainage, rather than to attempt intermittent drainage by means of a catheter introduced through a trocar. I assume that the man with a large residual of uninfected urine—the dangerous type of patient—is practically sure to be infected by any method by which you drain him. The urine is an especially favorable culture medium if, due to renal back-pressure, it contains a slight trace of albumin. The wider the bladder opening, the less intermittent the drainage and, hence, the less probability of kidney infection—the great danger in these cases. Likewise, constant and free drainage tends to lessen the congestion about the prostate, thus lessening the probability of troublesome bleeding at the time of enucleation. I confess that I am less troubled about the bleeding than many, since the simple method which I have used for many years of packing about a soft rubber catheter effectually controls hemorrhage.

CLOSING DISCUSSION.

DR. P. W. PILCHER, Brooklyn, N. Y.: I appreciate very much the fine things that have been said by the members about my paper. It is especially pleasant to me to have the technic of this two-stage operation accepted by the New England men, because I know how conservative they are in their prostatic work. Our main object in developing this technic has been to shorten the period of anesthesia, to lessen the surgical shock, to control the hemorrhage, to remove all obstructive disease and perform the operation in such a way that the patient will remain dry after his operations, and be up and about after the first 24 hours. This we have been able to accomplish by doing the operation in two stages, feeling our way in each case and using the Pezzer catheter, which entirely controls the output of the urine.

The most interesting development during the past few months has been the education of the bladder after the drainage tube has been removed and substituting the Pezzer catheter within four days, we are able to have the patient resume his urination, controlling any obstruction by the Pezzer catheter safety valve.

It is remarkable in our experience how completely the suprapubic wound heals, even in the presence of an infected bladder, without any infection of the prevesical space when the technic has been followed out. It will be interesting to see if others obtain equally good results following this technic.

CLINICAL CONFERENCE OF THE NEUROLOGICAL INSTITUTE, NEW YORK.

REGULAR MEETING, MAY 13TH, 1915.

DR. J. RAMSAY HUNT in the Chair.

A CASE OF PLURIGLANDULAR DISTURBANCE OF THE INTERNAL SECRETIONS.

DR. T. S. KEYSER presented a patient from the First Division illustrating the profound effects of an apparently purely functional disturbance of the internal secretions.

There are certain definite symptoms which have been recognized for many years as being due to either hypersecretion or hyposecretion of one of the ductless glands. For example: Caleb Hillier Parry in 1825 described eight cases of enlargement of the thyroid gland in connection with enlargement or palpitation of the heart, exophthalmus, agitation, and mental distress; Sir William Gull in 1873 wrote his classical work on myxoedema dependent on the partial or complete cessation of the thyroid activity; Addison in 1855 wrote his monograph on The Constitutional and Local Effects of Disease of of Suprarenal Capsules; and in 1886 Pierre Marie described with remarkable completeness the condition to which he gave the name of acromegalia.

However, during recent years the subject of internal secretions has acquired renewed interest from the fact that numerous cases which do not present any definite clinical entity are doubtless the result of a purely functional disturbance of one or more of the ductless glands. The interrelation of the various glands is so intimate that usually there is evidence of abnormal secretion of several, but practically always one gland is primarily at fault. If the anamnesis is taken from this standpoint a condition, which otherwise seems entirely without cause, can be explained step by step, thus showing quite clearly why at a certain time a patient develops certain symptoms. For example, a woman may give a history of irregular, painful menstruation and later suddenly begin to have attacks of severe migraine or even of epilepsy. In such a case it is quite evident that there is some disturbance of the gonads primarily. However, the pituitary gland is able to compensate temporarily for this but sooner or late, due to the strain of overwork, it becomes congested and thus causes the migrainous or epileptiform attacks.

The following case is presented in order to attempt to show why a woman, apparently in perfect health, suddenly develops an illness so marked that one would scarcely recognize her as the same individual.

The patient is a nurse, aged 31, who was admitted to the hospital on February 15th, 1915, complaining of insomnia, headache, paraesthesia and nervousness.

Until the onset of the present illness she was an unusually healthy, energetic and optimistic individual. There are however, three important facts in the past history: first, she grew up very rapidly, attaining the height of five feet seven inches at the age of 15; second, menstruation began at 11 years and occurred regularly, without undue pain and with normally profuse flow until the present illness was well established; third, before or after each menstrual period she complained of nausea and temporal headache, always unilateral, followed after 15 to 18 hours by vomiting, with complete relief of the headache. Her mother and five of six sisters also had the same symptoms associated with menstruation.

In 1910, she graduated from St. Vincent's Hospital with a very good standing. Shortly after this, she became night supervisor at the New York Foundling Hospital. For two years she fulfilled her duties with the greatest efficiency, always active, energetic and much interested in her work. Except for the headaches associated with menstruation, she was well until 1912.

The present illness began suddenly in April, 1912, with insomnia. After four days of sleeplessness, she began to take various hypnotics, with little effect. When she did go to sleep, she had constant worrisome frightful dreams, from which she would awaken feeling unrefreshed. After a few weeks she became nervous, restless and depressed. She became inefficient in her work, and in a month had to give up her position at the hospital. Since this the insomnia has persisted. She gradually became more and mode indolent, careless about her personal appearance, and unable to do any work at all. Before the illness began she perspired freely on moderate exertion, since then she does not perspire at all, even in an electric bath.

After several months she began to gain weight, although she says she ate less than before. Her normal weight had been 170 lbs. By July, 1913, she weighed 257 lbs.—a gain of 87 lbs. Since then her weight remained about the same. Not only has there been increase of adipose tissue, but the features have increased in size according to the statement of the patient and her friends.

In July, 1912, she began to have tight drawing headaches in the occipital region. In the morning she would feel nauseated, but never vomited. A year later she complained of a constant numb dead feeling, and a sensation of pins and needles over her entire body, but especially about the neck and shoulders. Soon after this, twitching movements of the neck and shoulders began, which she is unable to control. She thinks these movements are due to the annoying sensations which she endeavors to relieve in this way. She complains also of frequent nocturnal urination. For the last six months, menstruation has occurred every two or three weeks The flow is rather scanty. At night during the last year she has had hot flushes. At no time has she noticed any disturbance of vision, nor has she vomited.

In comparing the patient's appearance with that indicated by a photograph taken in 1908, one is much impressed with the striking contrast. At that time she presented the picture of a normally developed, healthy, alert, composed woman, with a tendency to adiposity. At present she is fat, indolent, careless about her personal appearance and she frequently twists her neck and shoulders, in order, she says, to relieve the tightening sensation of the skin. The skin is coarse, puffy, dry and greasy. There is no abnormal pigmentation, except a few pigmented naevi about the shoulders and the face. The hair of the head is dark, fine and shiny, and devoid of curls. The pubic and axillary hair are normal. The eyebrows terminate abruptly at the out quarter. There is a slight growth of hair on the upper lip, but no abnormal development of hair on the trunk or extremities.

There is a general deposit of flabby adipose tissue, especially marked about the face, neck, shoulders, abdomen and hips. The breasts, which formerly were well developed and firm, are now flabby and pendulous, and seem deficient in glandular tissue. The external genitalia are very small.

The head and face are very large, but the cheek bones, and lower jaws are not unduly prominent. The teeth are not spaced. The cranium measures 13½ inches in circumference. The hands and feet do not appear enlarged. The patient is 5 feet 7 inches tall, the same as when she was 16 years old. The nails are stumpy and ridged up and down. The x-ray of the cells tursica is entirely negative.

The eyes are slightly prominent, but the usual signs of exopthalmus are absent. The motility of the eye-balls is normal, except that on looking upwards the right eye-ball turns slightly inward. The pupils are equal, regular, and react normally. There is no disturbance of vision, nor retraction of the visional fields. The fundi are normal. There is no evidence of involvement of the other cranial nerves, or of the motor and sensory tracts of the cord.

The heart is not enlarged and no murmurs are heard. The pulse is regular, but rather rapid, varying in rate from 80 to 100. The blood pressure showed marked irregular variation,—at times as low as 120 and at times as high as 160. The temperature is usually sightly subnormal. The blood and urine are entirely negative. The patient was given levulose in increasing doses up to 500 grams without the appearance of sugar in the urine. The normal sugar tolerance for one of her weight would be 445 grams.

The history of rapid increase in weight, absence of perspiration, and polyuria, together with the character of the skin, the disposition of the fat, and the dystrophy of the mammary glands and external genitalia, subnormal temperature and reduced metabolism, is the typical syndrome of hypopituitarism associated, doubtless, with disturbance of the thyroid secretion.

However, there are several other facts in the case which bring up the question of whether the pituitary dystrophy is primary, or whether secondary to a disturbance of other internal secretions.

The patient first showed a precocity in her sexual development. At the age of 11 she began to menstruate, and showed the development of a girl 14 or 15. She also grew very rapidly between the age of 11 and 15. The headache and vomiting, although apparently a hereditary condition, might be due to some abnormality in the secretions of the genital organs, giving rise to congestion of the pituitary secondary. Menstruation occurred regularly for 20 years, but during the last four months every 2 or 3 weeks. In a woman of 45, this alone would suggest the arrival of the menopause.

The present illness began with insomnia, followed in a short time by a mental state somewhat simi-

lar to an involutional psychosis. These symptoms would hardly be due to the hypophysis or thyroid, but could be quite consistent with the climacteric. The paraesthesia and hot flushes also point strongly to the ovarian secretions.

The variable blood pressure, the pigmented naevi, and the hirsuities would also suggest involvement of the suprarenal glands.

In this case the gonads are considered to be primarily or constitutionally at fault. Until the onset of puberty the patient was never sick, not even having the ordinary diseases of childhood. This fact, together with the absence of any physical signs, such as spaced teeth, would show that all the ductless glands were functioning perfectly. However, menstruation began unusually early and was associated with severe headache and vomiting. Apparently the patient inherited a defective gonadal apparatus as her mother and sisters had the same difficulty. The pituitary gland, which is closely associated with the sexual, at once gave evidence of being affected at the menstrual periods, giving rise to migraine and vomiting, and, probably as a result of hypersecretion causing rapid growth during the early years of puberty. Aside from this however, nothing of a serious nature manifested itself until the age of 28, when it seems that the sexual apparatus which for 18 years had been functionating regularly although abnormally, became exhausted and, as a result, put still further strain on the pituitary. The latter, unable to compensate for the gonads, caused a general break in the balance of all glands of the internal secretions, thus giving rise to the numerous symptoms and signs which can be accounted for only on such a basis.

ACUTE CHOREA OF THE INFECTIOUS TYPE, RELIEVED BY LUMBAR PUNCTURE.

DR. WALTER TIMME from the Third Division showed a typical case of Sydenham's chorea which had begun six weeks previously, and had rapidly progressed in severity until the child was admitted to the New York Neurological Institute five days ago. The patient, a girl of eight years, showed upon admission all the usual symptoms in marked degree. Her choreiform movements involved the whole body to such an extent that she could neither stand nor walk. Her speech was affected, she was unable to hold anything in her hands, and she was emotionally much disturbed, irritable and depressed by turns. She had no endocardial murmur although the heart's action was rapid and overacting. Her previous history included scarlet fever and measles a few years ago and a slight tonsillitis with febrile disturbance just before the present attack began. Upon admission she was so choreic that boards had to be placed on either side of the bed to prevent her from falling out during the spasmodic movements. No medication of any kind was given for forty-eight hours and the condition persisted as at first. Then spinal puncture was done and about 8 c. c. of fluid removed which proved to be normal. It flowed out under pressure, however, in a fine stream although the child was lying prone. A few hours after this procedure the choreiform movements became less general and in a day they remained apparent only in the hands. In three days they had practically disappeared, the child felt well and began to walk. In five days she was discharged with only the faintest suggestion of choreic twitching in the hands. So that in five days following lumbar puncture, a most intensely developed genuine chorea succumbed; which under former treatment of Fowler's solution, salicylates, and rest, would have taken as many weeks at least. Passini (*Wiener Klin. Wochensch.* xxvii No. 42) reports five cases that he treated by this method, three of which were cured. These three had all been acutely affected for several weeks following rheumatic attacks and were free from fever. The fluid was uniformly at a fairly high pressure and was sterile.

The unimproved cases were all of longer standing and the fluid was not under undue pressure. It would seem that we have in this therapeutic measure one that will prove of great value in selected cases of chorea of the infectious Sydenham type.

The Third Division of the Institute will shortly present a series of these cases.

A CASE OF UNILATERAL ASCENDING PARALYSIS.

DR. J. RAMSAY HUNT presented from the Second Division, a Russian Jew, 43 years of age, who was admitted to the Neurological Institute on April 12th, 1915. He is a worker in metals, chiefly brass and lead, but has never had symptoms indicative of lead poisoning. He denies lues and has never indulged in alcohol or tobacco. There is no history of injury. His health, prior to the onset of the disease from which he now suffers had been excellent and he can recall no previous illnesses.

The family history presents several points of interest and is as follows:

His father and mother were first cousins and had 5 children: The first a girl, is living and in good health at the age of 44. Two brothers aged 36 and 25 respectively are living and well. One sister is now 37 years of age, and is a patient of the New York City Home. She is paralyzed and cannot walk. Her symptoms began at the age of 30 and were gradually progressive. (Dr. Climenko reports that she has a unilateral local lesion in the cervical region with spinal hemiplegia and contralateral sensory disturbances).

The mother is living at the age of 73 and is in good health. The father is said to have had a lameness of one leg and to have walked with a cane, but the account of this trouble is obscure, and it was probably arthritic and not spinal in origin.

Onset: The first symptoms of the disease appeared 5 years ago and consisted of a weakness of the left leg. At the beginning, the weakness was chiefly noticeable in the foot and was accompanied by some stiffness of movement, so that the toe often seemed to catch and meet obstructions. This gradually progressed, ascending the extremity until finally the movements of the knee and the hip were also affected. For three years these symptoms were limited to the left lower extremity and during this time there were no pains or paraesthesias, but not infrequently the muscles of the leg would cramp and contract, which caused some pain, but rubbing the parts and a change of position would bring prompt relief. Such spasmodic seizures often occurred in the night and would awaken him.

Soon after the beginning of the illness, his sexual power began to fail and for the past three or four years he has been impotent, with, however, the preservation of libido. For the past two years there have been some slowness and delay on the act of micturition, but never any incontinence. He is also constipated. Two years ago, *i.e.*, three years after

the onset of stiffness and weakness in the left leg, a similar disturbance became manifest in the left hand and arm. This appeared very insidiously, and as in the leg, progress had been slow and gradual. There were no pains or paraesthesias, simply slowness, weakness and stiffness of the movements. He is not conscious of any disturbance of speech or articulation, or of the movements of the neck.

He has at no time had headache, or vertiginous seizures or faints, and his eyesight is good.

Subjectively, the right side is perfectly normal, with the exception of occasional muscle cramps in the right leg and arm. Otherwise, he claims that this side is as active and strong as ever. There is some variation, apparently in the weakness of the left side, while the spastic paralysis from which he suffers is constant. He tires very readily and after walking ¼ to ½ a mile he must rest. After a brief rest he is able to continue. On some days he is able to walk better and farther than on others. The sensation induced by walking, however, is one of pure fatigue and there are no pains, paraesthesias or painful cramps of the extremities. He chews and swallows with perfect ease and there is no diplopia and no impulsive emotional outbursts.

Examination. He stands perfectly well alone and on a narrow base, on closure of the eyes there is no swaying. The attitude is somewhat hemiplegic and the gait is typically so, carrying the arm flexed and swinging and dragging the leg in the typical hemiplegic manner. The facial innervation, voluntary and emotional, shows a slight weakness of the lower branch on the left side. The tongue is protruded in the median line, no fibrillation or atrophy of the muscles of the tongue.

The pupils are equal and react promptly to light and accommodation. The ocular excursions are normal, no nystagmus. DR. HOLDEN reports that the fields and optic nerves are normal. The innervation of the pharynx and muscles of mastication is normal. The palatal reflex is active and the jaw-jerk is active. The hearing and smell are normal and equal in the two sides.

The spine is normal in contour and in movement. There is no spinal rigidity and no pain on movement or jarring.

In comparing the movements of the arms there is some weakness and a distinct slowing of the movements on the left side. There is however, no tremor and no ataxia. The tendon reflexes including the periosteal reflexes of the upper extremities are exaggerated and especially on the left.

The left leg is weak and spastic; movements of the right leg are strong and free from spasticity, The knee jerks and ankle jerks are exaggerated on both sides, but to a much greater degree on the left. On the left side there is ankle clonus and an exhaustible patellar clonus both of which are absent on the right.

The Babinski and Oppenheim phenomena are typical and constant on the left. At times, the Babinski reflex is also elicitable by stimulation of the right plantar region, but it is inconstant. The Strümpell phenomenon is present on both legs. The abdominal and cremasteric reflexes are usually absent on both sides. Occasionally faint responses were obtained on the right side. Associated movements were not demonstrable. There is nowhere any evidence of localized muscular atrophy or fibrillary twitchings. The general muscle-volume of the left arm and leg is less than that of the right.

The	Right	leg	measures	13½ inches.
	Left	"	"	13 "
	Right	thigh	"	18¾ "
	Left	"	"	18¼ "
	Right	arm	"	10¼ "
	Left	"	"	9¾ "
	Right	forearm	"	10 "
	Left	"	"	9½ "

There is no ataxia or tremor of movements of the lower extremities.

The general sensations, both superficial and deep, are quite normal.

The heart and lungs and abdominal viscera are negative. The examination of the urine, blood and cerebrospinal fluid by Dr. Kaplan are negative. There are no granular degenerations of the erythrocytes. (No lead on the gums). The Wassermann reaction of the blood and cerebrospinal fluid is negative. it contains no excess of globulin and only one cell to the cmm. Fehling's reduction is +.

Remarks. The case belongs to that rare clinical type which was first described by DR. CHAS. K. MILLS as *"unilateral progressive ascending paralysis,"* and caused by a unilateral degeneration of the pyramidal tracts. Later DR. SPILLER demonstrated microscopically a degeneration of the pyramidal tracts in a case which began as unilateral ascending hemiplegia, later passing into triplegia. That this symptom complex may be simulated by diseases other than primary pyramidal tract degenerations has been shown by Patrick, (unilateral ascending paralysis in paralysis agitans) and by Potts in multiple sclerosis. Following Mills, Oppenheim has also indicated the possibility of unilateral, postero lateral sclerosis; viz: an ascending hemiplegia complicated by sensory disturbances.

I have observed unilateral ascending paralysis in a case that years later terminated in the clinical picture of amyotrophic lateral sclerosis.

The case just reported I regard as a primary lateral sclerosis with unilateral localization of the disease. Doubtless later, the other pyramidal tract will show similar involvement and the importance of such a case is to emphasize the possibility of a unilateral limitation in what is usually a bilateral and systemic disease.

Book Reviews.

Human Motives, by JAMES JACKSON PUTNAM, M.D., Professor Emeritus, Diseases of the Nervous System, Harvard University. Mind and Health Series, Edited by H. ADDINGTON BRUCE, A.M. Little Brown & Company, Boston, 1915.

Dr. Putnam describes the main purpose of this small volume to be the "focussing of attention on the aid afforded by modern psychology to the upbuilding of a really sound and practical philosophy of life." In the theory of psychoanalysis as promulgated by Freud and his followers, Dr. Putnam sees the broadest implications and finds in the theory not only a means of arriving at important facts in individual

lives but also the possible foundation, or at least support, of a philosophical system. Although always courteously expressed, he has little sympathy with the materialistic view-point. As he believes it, the material world must find its ultimate explanation in a world of ideas and vital energy. "Physics," he says, "can come to its rights only through metaphysics;" and again "The genetic method leads straight and of necessity to the philosophic method." On this general basis he studies motives and it need hardly be said that the book is broad minded, uplifting and widely suggestive. The chapter headings are as follows: I, Main Sources of Motives: II, The Rational Basis of Religion; III, The Psychoanalytic Movement; IV, Educational Bearing of Psychoanalysis; V, Instincts and Ideals; VI, An Attempt at Synthesis. We sometimes wish that Dr. Putnam were not so sparing of others' feelings and were less modest in the expression of his own well considered opinions, but it is evident that beneath his kindly words lies a conviction that he has a message for those of narrower vision. The book should be widely read especially as a philosophic expression of the significance of certain far reaching modern tendencies in medicine. The philosophic approach to medical problems is sadly needed and this Dr. Putnam supplies in this readable treatise on Human Motives.

Report of the Massachusetts State Board of Health. Boston: State Printers. 1914.

The recently published forty-fifth annual report of the State Board of Health of Massachusetts gives a record of the activities of that board for the year ended November 30, 1913. In the matter of antityphoid inoculation the following report is made:—

"During the year 21,014 ampoules of antityphoid vaccine have been distributed for use by the citizens of the Commonwealth, but of this number 10,526 ampoules were utilized by the militia. This immunization of the militia, affecting as it does a large body of young men in the prime of life, at an age peculiarly susceptible to typhoid infection and subjected, at the time of professional manoeuvres, at least, to increased exposure to polluted water supplies, cannot but have an appreciable effect upon the incidence of the disease.

There is every reason to believe, furthermore, that the practice of inoculation of nurses, inaugurated two or three years ago at a considerable number of training schools throughout the Commonwealth, has become increasingly prevalent, with undoubtedly beneficial effects."

The total number of samples of food and drugs collected and examined during the year was 9727. One hundred and sixty-one prosecutions were made in the various courts of the Commonwealth. Of these, 116 resulted in conviction, 2 were dismissed by order of the court, 1 dismissed for lack of jurisdiction and 1 nol prossed. Four thousand four hundred and ninety-three dairies were examined and the attention of 1543 proprietors and boards of health and of cities and towns called to objectionable conditions. The board received notification of 66,249 cases of infectious diseases. The fatality from typhoid was 11.7% of cases reported, diphtheria 9.3%, scarlet fever 3.6%, and measles 1.1%.

Transactions of the American Society of Tropical Medicine. Vol. 9. New Orleans, La. 1914.

This volume contains the papers read before the society at its Eleventh Annual Meeting held at Boston on May 29 and 30, 1914, together with papers published under its auspices. The volume opens with the address of its president, Dr. Richard P. Strong, in which he calls attention to the opportunities for investigators and for public health work in tropical diseases, the need for the endowment of a school for the training of physicians in this branch of medicine and the opportunity for trained physicians in Mexico and the American Colonial Medical Service. Dr. Aristides Agramonte of Havana, Cuba, writes on "The Late Outbreak of Plague in Havana," in which nineteen cases occurred with three deaths. Dr. Victor Heiser, Director of Health for the Philippine Islands, contributes a long article on the treatment of leprosy by the hypodermic use of chaulmoogra oil mixture, in which he states that use of this method has given more consistently favorable results than any other. It produces apparent cures in some cases, causes great improvement in many others and arrests the progress of the disease in almost every instance.

Dr. S. Burt Wolbach, of Harvard University Medical School, in an article on the filterability and biology of spirochaetes, states that the method of filtration as a means of separating spiral organisms from ordinary bacteria will probably hold good for other saprophytic and pathogenic spirochaetes and allied micro-organisms; that organisms larger than many bacteria will pass the Berkefeld V, N, and W filters, such as Spirochaeta duttoni, Spirochaeta elusa, Spirochaeta biflexa, intestinal spirochaetae; and that there is no evidence of spirochaetes multiplying by any other method than single fission. Dr. Edouardo Liceaga of Mexico City gives an account of the war waged against yellow fever and the mosquito in Mexico. The campaign began in 1903 and has continued without interruption at any season of the year. Its results have been, not only to do away with the serious yellow fever epidemics of former years, but to extinguish the endemic secular foci such as those hitherto existant at Vera Cruz and Merida. Dr. Richard P. Strong gives a brief account of his first expedition to South America in 1913, and his investigations of various tropical diseases, such as malaria, verruga peruviana, Oroya fever and uta.

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PREVALENCE OF SYPHILIS IN THE ARMY.

AN attentive reading of the latest bulletin issued by the medical branch of our army justifies one in regarding apprehensively the ravages of syphilis. Dr. Vedder[1] has made an exhaustive study of this disease in the various branches of the service, including soldiers at the United States Soldiers' Home at Washington, D.C., the cadets at West Point, recently enlisted soldiers, and men who had just left the army. His diagnosis was made exclusively by means of the Wassermann reaction, which has been in use in the army since 1909. He states that a double plus Wassermann is considered to be a positive indication of syphilis, for in 1049 such cases where means of confirmation of the diagnosis existed there were found only four cases of error. A single plus Wassermann is considered as almost certain evidence of syphilis, as it was found to be 99% exact.

[1] The Prevalence of Syphilis in the Army, by Capt. Edward B. Vedder, U. S. A. Bulletin No. 8, War Dept.

Captain Vedder reports the results of the examination of recently enlisted recruits who had passed the physical examination and were therefore presumably non-syphilitic. Among these men he found the double plus Wassermann in 7.75% and the single plus in 9.02%, that is, about one of them in six had syphilis. The vast majority of these men were between the ages of twenty-one and twenty-four. Vedder concludes from this that about 20% of all adult white males are syphilized.

We are inclined to think that this is too pessimistic, for it would seem that the career of an enlisted man in the army, as it is at present constituted, is not sufficiently alluring to attract a very high class of recruit. It is a well known fact among army medical officers that the present mental survey given recruits is not searching enough; and Captain Edgar King, of the United States Army Medical Corps, who has published his researches into mental disease and defect in the army as Bulletin No. 5 of the War Department, is at present endeavoring to get a measure passed which will provide for a more adequate mental examination of applicants for enlistment.

As a result of his examination of the cadets at West Point, Captain Vedder has come to the conclusion that 5.46% of them are syphilitic. This is rather appalling when we consider that if, about fifteen years from now, this country were involved in a war, some of these officers, by then advanced to the grade of colonel, or even higher, may be in the first stages of general paresis.

In his examinations of the enlisted men, Vedder found that among the white soldiers 16.08% have syphilis, and argues that, contrary to general belief, the morale of the enlisted man must be somewhat higher than of the man in civil life of about the same class. Prospective recruits are subjected to a very rigid physical examination, and those showing evidences of syphilis are rejected. This has the effect of making the soldier a picked man physically, while the rejected candidate remains in civil life and helps to swell the average of syphilitics there. Then, too, soldiers acquiring syphilis in such a form as to incapacitate them are discharged from the army, and their numbers add to the percentage of syphilis in civil life.

Among the negro soldiers, 35.30% were found to be syphilitic. This agrees with the observations of writers on syphilis in the negro, some of

whom state that approximately half of all adult negroes are syphilitic. All of them agree that syphilis is much more common among negroes than among white men.

Dr. Vedder has made a number of other studies which lack of space forces us to omit, but which are worth reading, such as studies of syphilis in the Porto Rican troops, the soldiers at the Government Hospital for the Insane, the members of the United States Soldiers' Home, and military convicts.

As might be expected, Captain Vedder has a number of conclusions to draw from his exhaustive studies. He believes that of the recruits who get into the army about 17% are syphilitic and a majority of these have never been diagnosed. Syphilis is much more frequent among the negro soldiers. The percentage is lower among army men than among men of a similar class in civil life. He expresses his belief that syphilis is a greater menace to public health than any other disease, not excluding even tuberculosis.

To check its ravages in the army Captain Vedder recommends the rejection of all syphilitic recruits, the presence of syphilis to be determined by the Wassermann reaction, or if this rejection is for any reason impracticable he thinks that only those syphilitics should be admitted who show no active signs of the disease, and that these should be given appropriate treatment during the whole of their stay in the army.

THE MENACE OF A DECLINING BIRTH-RATE.

In the issue of the Journal for Sept. 9 we commented editorially on certain aspects of the effect of education upon eugenics, particularly with reference to the decline of birth-rate, often observable among more highly educated types. From some points of view, perhaps, this phenomenon, much though it may be regretted, need not be regarded as a cause of alarm. In his leading article in this week's issue of the Journal, Dr. Otis, discussing the conflict between nature and civilization, points out that the lamentable fact of the constant elimination of higher types must probably be accepted with resignation. Under existing conditions it cannot be prevented, and can best be combated only by attempts at eradication or improvement of inferior types. To decrease the infant death-rate remains at present our most effective method to offset the menace of a declining birth-rate.

In England, unfortunately, even this method seems, temporarily at least, to be yielding unsatisfactory results. The past year doubtless presents unusual circumstances, yet though the decline in the birth-rate might well be accelerated by war conditions, the infant death-rate in that country ought not to have increased as alarmingly as in point of fact it has done. Commenting editorially upon this situation, the issue of the *Lancet* for Sept. 4 says in part:—

"Recent statistical returns of the births and deaths of infants in this country are disquieting; regarded individually they are bad enough, but taken collectively they are distinctly alarming. The continued fall in the birth-rate, which has now reached the lowest level heretofore recorded, may have many explanations, but the factor of the deliberate limitation of families, whether from provident or selfish motives, can no longer be ignored. The dissemination of knowledge with respect to the use of contraceptives has undoubtedly contributed to this result, not only among the upper and middle classes, with whom their employment has been reduced almost to an exact science, but even among the poorest, with whom such practices were quite exceptional a decade ago. Whether this explanation has any bearing on the falsification of the prophecies of the scaremongers with respect to 'war babies' still remains to be seen, but from facts which are accessible to all those who keep their eyes open it is by no means improbable. While on these and other grounds the fall in the birth-rate is understandable, the figures published with respect to the mortality of infants under one year of age during the current year certainly demand more explaining than is afforded by the assumption that the position is due to a high prevalence of epidemic disease engendered by the unusual circumstances or to the dearth of doctors and nurses. That epidemic diseases have exacted a larger toll of infant life than usual cannot be gainsaid, but as an offset to this we must remember that the meteorological conditions have been distinctly favourable, while the many organizations which have been engaged in alleviating every form of distress have made it highly improbable that poverty has been concerned in the results. Indeed, it may almost be claimed that there has never been a time in the history of our country more free from want of employment, and the destitution which want of employment brings in its train, than the present moment.

"So serious does the position appear to those who are actively engaged in combating deaths among infants that the National Association for the Prevention of Infant Mortality has arranged for a conference at the Mansion House on Oct. 28, at which the Lord Mayor has consented to

preside, and at which the causes that are responsible for the present state of affairs will be fully discussed by many of the foremost authorities on the subject. It is to be hoped that out of the mouths of these many counsellors much wisdom will result, and that their advice, in addition to the benefits which are confidently expected from the operation of the new provisions of the Notification of Births Act, will help to relieve a situation which is beset with many national dangers."

The *Lancet* speaks with laudable optimism, yet probably little of permanent accomplishment may be expected of artificial regulations and measures, however wisely conceived. After all, the causes of declining fertility probably lie deep in race temperament and its reaction to changing environment. The will to survive and dominate is the first essential to doing so.

Precisely the lack or weakness of this will constitutes the real menace of the declining birth-rate which is its manifestation. The reasons for this "abnegation of the will to live" are not far to seek. They are pointed out by the two authors whose work on this subject we have already quoted.[1] The extent to which they have become operative throughout the world, especially in English-speaking communities, is undeniable. In New South Wales, for instance, the royal commission, appointed to investigate the declining birth-rate in that country, reported in part as follows, after a careful study of local birth statistics:—

"We are satisfied that the statistics show:

(a) That a decline of birth-rate in recent years has characterized all the states of Australia and New Zealand; also the United Kingdom; also many of the large cities of Europe, United States, and South America.

(b) That there was in New South Wales a sudden remarkable fall in birth-rate in the year 1899, followed by a continuance and rapid decline, until, in 1902, the total decline has exceeded 10 per 1000 population.

"There is no evidence of any increase of physiological sterility in women in New South Wales. . .

"The conclusions which we draw from the evidence on this branch of our subject are inevitable, namely, that there is a diminution in fecundity and fertility in recent years, which is due to:

(a) Deliberate prevention of conception and destruction of embryonic life.

(b) Pathological causes consequent upon the means used and the practices involved therein."[2]

[1] See JOURNAL, page 398.

[2] In last week's issue of the JOURNAL we pointed out editorially some of the evils of the artificial reduction of the birth-rate by methods of voluntary control.

If these facts be true,—and experience and observation go far to show them so,—there would appear little prospect of abating materially the menace of a declining birth-rate merely by reducing infant mortality. To check the declining birth-rate induced in any nation by the circumstances of civilization, there must be a genuine regeneration of race instinct. The unconscious desire must be replaced by the conscious will to survive. Then, and then only, may there be expected a cessation of the constant destruction of higher types. Doubtless this adjustment of evolutionary economy will ultimately be made. Meantime it appears inevitable that families and races must continue to perish through lack of adequate will to persist.

A NEW THEORY OF THE NEUROTIC CONSTITUTION.

THE make-up of the neurotic has always been a fascinating subject. For many it has been a will-o'the-wisp which has led them on to dangerous ground, where they with great difficulty held their balance, if they did not actually fall. The recent psycho-analytic movement led by Freud and propagated far and wide by his able followers, is a specific illustration of a definite effort to understand the neurotic individual.

Alfred Adler, of Vienna, a disciple of Freud, impelled by rather original concepts which found their birthplace in his mind, now offers a new theory of the make-up of the neurotic individual. This theory is sufficiently important to demand consideration by those who make it their business to understand their fellowmen.

In brief, Adler's concept of the character of the neurotic individual may be presented as follows: The neurotic is characterized by definite organic defect or inferiority. This somatic deficiency or inferiority, being concerned with one or more functions, and being unknown to the individual, is thus unconscious. The subnormal organs or functions are excessively unstable, irritable, sensitive, easily disturbed and unable to withstand or adapt to excessive or unusual stress. The other correlated functions attempt to compensate for the defective activity of the abnormal function or functions of one sort or another. But in the neurotic, complete and successful compensation fails to take place and there follow internal disharmony, unrest and instability of such a degree that the individual

finally becomes aware of his organic insufficiency and makes conscious efforts to compensate successfully. In efforts toward this end, the neurotic endeavors to hide his defects by various devices of concealment, and in so doing goes to extremes and overdoes himself, so that various peculiar traits and characteristics are developed, which constitute the peculiarities of the neurotic condition. Furthermore, in spite of these handicapping defects, the neurotic struggles to arrive at a state of equanimity and equilibrium, so that he will be like others. In this respect, too, he overdoes himself, and finds himself striving to outdo others, to excel them, to be all-powerful and superior, to attain self-maximation, or, in Adler's manner of expressing it, full masculinity.

The neurotic thus has a two-fold life's battle—to hide and make up for his organic defects and, despite them, to achieve full power and masculinity. It is but natural to expect that he will frequently have recourse to unusual, immature, even child-like methods of reaction. In certain cases and under certain situations compensation is impossible and then we find varying degrees of decompensation developing, from simple anxiety to the many psychoneurotic and psychotic disorders. But even in decompensation there is for the individual a salutary recourse, for in this world of unreality which he builds up for himself he can at least continue to survive without immediate and complete disintegration of the personality.

It now remains to prove or disprove the truth of these ideas. Even though this concept may not apply *in toto* to the neurotic, the general idea may at least be found useful in the elucidation and understanding of many apparently peculiar mental states, normal or abnormal.

MEDICAL NOTES.

New York Death Rate.—Despite the fact that during the week ended Sept. 18 New York experienced the warmest and most humid weather that has visited the city during September in more than a score of years, the death rate was .83 per 1000 population lower than during the corresponding week of last year. Especially noteworthy is the fact that the deaths from diarrheal diseases under five years were fewer than during the week ending September 19, 1914.

The following causes of deaths showed a decrease: Scarlet fever, diphtheria and croup, pulmonary tuberculosis, Bright's disease and nephritis.

During the week there were four deaths from sunstroke, as compared with 1 death from the same cause during the corresponding week of last year.

The deaths during the week numbered 1291 with a rate of 11.60, as compared with 1330 deaths and a rate of 12.43 for the week ending September 19, 1914. The difference of .83 in the weekly rate means a saving of 92 lives. The death rate for the first 38 weeks of 1915 is 13.49, as compared with 13.94 for the first 38 weeks of 1914.

Increase of Anti-Typhoid Vaccination.—The United States Public Health Service reports that the use of typhoid antitoxin is rapidly becoming general. It is estimated that during 1914 over 100,000 persons throughout the country were immunized, and it is believed that in 1915 the number will exceed 300,000. In four counties of North Carolina, where campaigning has been conducted, it is estimated that 20,000 people will be immunized.

Inheritance of Temperament.—In the August issue of the *Proceedings* of the National Academy of Sciences is an article on "Inheritance of Temperament" by Dr. C. B. Davenport, of the station for experimental evolution, Carnegie Institution, Washington, D.C. This paper, which is based on a careful statistic study of 89 family histories, suggests that the various types of human temperament are dependent on definite, heritable physical factors.

"Temperament is hereditary and as little alterable as stature. There are involved in the inheritance of temperament two factors,—one which induces more or less periodic excitability and whose absence results in calmness, another which makes for normal cheerfulness and whose absence permits more or less periodic depression—these factors being inherited independently and occurring in any combination. Persons may be divided into calm, nervous, or choleric according to their degree of excitability, and into cheerful, phlegmatic and melancholy, according to their degree of cheerfulness or its opposite. There are, therefore, nine classes of temperament formed by combining these two classes, namely, choleric-cheerful, choleric-phlegmatic, choleric-melancholic, nervous-cheerful, nervous-phlegmatic, and so on.

"The statistical study of the 89 carefully described family histories seems to bear out this hypothesis, because the different classes of temperament actually occur with about the relative frequency which would be expected from the hypothesis and the usual laws of inheritance."

Decline of Swedish Birth Rate.—The census of Sweden, which has recently been com-

pleted, shows the present population of that country to be 5,679,607. It also shows a steady decrease of marriages and births, so that during the past year the birth rate has been lower than at any time since vital statistics have been kept in Sweden.

LONDON DEATH RATES IN JULY.—Statistics recently published show that the total death rate of London for July, 1915, was only 11.1 per 1000 living inhabitants. Among the several districts and boroughs the highest rate was 16.7 in the old city precincts, and the lowest was 6.7 in Hampstead on the north.

ENDOWMENT OF DUNN LECTURESHIP.—It is announced that the trustees of the estate of the late Sir William Dunn have given to Guy's Hospital the sum of £25,000 sterling, for the endowment at Guy's Hospital Medical School of the Sir William Dunn lectureship in pathology.

THE TALL OR THE SHORT SOLDIER.—At a meeting of the Royal Sanitary Institute in London the question of whether the tall man or the short man made the better soldier was discussed at some length. Dr. Pembrey of Guy's Hospital stated that: "In times of peace height is a recognized standard for recruits, and most men will agree that the tall soldier is more imposing, docile and dignified than the short one." He, however, goes on to state that measurements may not be an accurate estimate of the value of a soldier who has, first of all, to bear the physical and mental strain of the campaign, to march, to shoot straight and to subordinate his personal interests to those of his race and country.

"Some of the advantages of the short man are his relatively greater agility and activity and relatively greater surface, which in hot weather and doing muscular work is a decided advantage. There are mechanical advantages and disadvantages in height. A consideration of these in relation to the work of the soldier results generally in favor of the little man."

Average heights of the men of the divisions of the British Isles have been computed as follows: for Scotsmen, 68.71 inches; for Irish, 67.90; for English, 67.36; and for Welsh, 66.66, the average for the kingdom being 67.66 inches, with a weight of about 170 pounds.

MORTALITY AMONG SAILORS.—It has been computed, from a classification of 8000 deaths in two years in the English merchant service, that accident and consumption cause the greatest number of deaths of sailors. Nervous diseases come next with pneumonia and bronchitis, and heart disease and Bright's disease rate fairly low. Alcoholism is responsible for only one per cent. of the deaths. The mortality rates are everywhere much higher than for the population on shore.

EUROPEAN WAR NOTES.

MAINTENANCE OF HOSPITALS IN PAIGNTON AND PETROGRAD.—It is announced that in spite of the withdrawal of American Red Cross Hospital units from Europe on October 1, the American Women's Hospital at Paignton, Devonshire, will continue to be maintained during the winter by private support. It is similarly announced that the American colony at Petrograd not only has voted to continue the maintenance of the American Hospital in that city, but has raised funds to pay for its enlargement from its present capacity of 28 beds to a capacity of 40.

APPOINTMENT OF DR. BLAKE.—Report from Paris announces that on Sept. 18 Dr. Joseph A. Blake resigned from the American Ambulance Hospital at Neuilly to accept an appointment as surgeon-in-chief of a new general hospital at Risorangis, near Fontainbleau, which will take care of the British wounded at Versailles. This hospital is to have twice the capacity of the American Ambulance.

OPENING OF LANGENBECK-VIRCHOW HAUS.—It is announced that the new Langenbeck-Virchow Haus, to be occupied by the Berlin Medical Society and the German Surgical Association, was opened on August 1. The formal dedication will take place at the close of the war.

NEEDS OF AMERICAN RED CROSS.—At the close of its first year of work among the belligerent countries of Europe, complicated as it has been by urgent calls for assistance from other parts of the world, the American Red Cross finds itself in acute need of funds for the continuation of its activities during the coming winter. The following letter from Miss Mabel T. Boardman at Washington to Miss Louisa P. Loring, emergency secretary of the Red Cross for Massachusetts, explains some of the plans of the organization for the coming season. It is earnestly to be hoped that there will be an ample public response to the call for funds from an organization whose activities have reflected such great credit upon the United States in the past and especially during the present war:

"Dear Miss Loring;—Your second letter of the sixteenth is just received. I think the suggestion you make of replenishing our contingent fund a most excellent one. We so often have sudden calls upon it, and it is becoming very much exhausted. For example, Admiral Caperton telegraphed to the Navy Department the other day begging the Red Cross to send him $1000 for the destitute in Hayti. One woman and one child had already been found dead from starvation in the market place. We were able to send the $1000, greatly to the gratification of

the navy and of the poor people who are suffering there. The money we sent to the Samoan Islands last winter, though only $2000, has been a great help to the poor there. Not long ago it was $500 worth of food supplies sent from Manila to save the lives of some hundreds of people in the Ladrone Islands that the governor of Guam reported to be starving. This will tide them over until Japan, which has taken the islands, can look out for them, and we have written the Japanese Red Cross asking it to take over the relief of these Ladrone Islands.

"The Mexican situation continues as you know, very complicated; but Mr. O'Connor, our agent, is, according to official reports, doing very fine work in Mexico City, and Mr. Weller, another agent of ours, has just obtained consent from the governor of Saltillo to take any food there under guard, and we are sending eight more carloads to Monclova and Saltillo. Mr. Weller reports that when he got to Saltillo the doctors told him the day before seven persons had died, and, the autopsy showed, from absolute starvation, and that the bodies contained no food. The public officials made them put it down as death from stomach trouble, which seemed ironical, as there was nothing to trouble their poor starving stomachs. Mr. Bonsal, whom we sent there is just back and he says the suffering which is increasing all the time, is beyond words. All our funds for Mexico have been used up, as we have had to send our last $6000 to Mr. O'Connor in Mexico City, but we do not want to put out a general appeal until the Government's policies are more definitely settled, both here and in Mexico.

"I am going to see that the last contributions given you ($300 and $500), which you say are undesignated funds (these two donors especially desired that their gifts should go to any department preferred), are put in the Mexican fund, as I believe nowhere is there really more acute suffering than there, and there really is nobody but the United States who can or will help them.

"Yours sincerely,

"Mabel T. Boardman."

Therefore, the undesignated fund in Massachusetts will now be collected for the American Red Cross to be expended in any way that is deemed most expedient at headquarters, unless the donors state that their gifts shall go to the war relief department, which also continues as in the past year.

All donations will be gratefully received by F. L. Higginson, Jr., treasurer, Massachusetts Red Cross, 44 State street, Boston.

Shortage of Physicians in England.—In the issue of the Journal for July 22, we noted the increasing shortage of medical men in Great Britain, especially in the rural districts where the condition has become really serious. The issue of the *Lancet* for August 28, is students' number. There is a special editorial discussion of the situation as follows:—

"That our medical schools will go very short of students is certain, and this will mean a dangerously small list of medical practitioners to minister to the needs of the country in the near future. The position is inevitable. The spirit which will lead young men of the military age and the educated class to join the army must have this effect, but it is the duty of the medical profession to face the difficulty and to make the best of it.

"The great work which the medical contingent with the army and navy has accomplished in the present war will act later as a stimulus to enthusiasm for our calling, and the shortage which must occur in our ranks for the three or four years following—say, 1917—will speedily remedy itself, when our social world resumes, as far as altered circumstances will permit, the scheme which we had, with considerable lack of prevision, come to regard as the normal one.

"The war found the number of the medical profession in this country already disquietingly low, and with indications of further sagging in those numbers. The figures indicate a serious shortage of medical men for the years following the war. Not only has a large number of young men who otherwise would be beginning or pursuing their medical studies been absorbed, but, unfortunately, a serious toll was already taken last autumn of those who, being already nearly qualified, would have been able to practice their professions as qualified men in a few months.

"The future will see an increased demand for medical men, and their prospects of success will be so great that the aspirants will assuredly be numerous. And there will be an improvement in the conditions which have prevailed in the past, not only because the profession of medicine will share in sociological progress, but because the record of the work of medicine throughout the war has been such that it must lead to a closer relationship between the medical profession and the public.

"The British public are taking a more intelligent interest in these things, and the energy with which lay bodies are working in coöperation with the medical profession in carrying out various schemes for the well-being of the people may be taken as an indication that the health of the nation will be a first consideration of the immediate future—which means that there will be a great demand for medical men at the close of the war.

"And this is the essential message to the students now in the schools. They are already wanted as qualified men, and in the near future they will be wanted even more urgently. It is a patriotic duty, imposed upon them by the conditions of the world, that they should spare no effort to pass all their tests in the shortest legal time, while by doing so they will reap the double reward of good citizenship and worldly success."

WAR RELIEF FUNDS.—On Sept. 25 the totals of the principal New England relief funds for the European war reached the following amounts:

Belgian Fund	$272,319.67
Polish Fund	50,630.04
British Fund	33,422.39
Italian Fund	3,418.10

BOSTON AND NEW ENGLAND.

WELFARE OF BABIES IN HOT WEATHER.—The extreme heat of week before last added greatly to the work of the Milk and Baby Hygiene Association at its twelve stations throughout the city. During four of the hottest days 1854 children were looked after, and the mothers instructed in various practical ways of keeping the babies cool. The greatest need now confronting the Association is money for a second nurse for its milk station in the North End Union, where there is a registration of 229 babies. Unless more funds can be raised the special summer nurse will have to leave on September 30. The work of the organization, requiring a budget of $24,000, is carried on entirely by voluntary subscriptions.

HOSPITAL BEQUESTS.—The will of the late Charles E. Davis, of North Andover, Mass., which was filed in the Essex Probate Court of Salem, Mass., on Sept. 21, contains a bequest of $5000 to the Salem Hospital for a child's free bed. The Salem Hospital and the Massachusetts General Hospital are among the four residuary legatees.

The will of the late Maria J. Shepherd, of Revere, Mass., which was recently filed for probate in the Suffolk registry, contains bequests of $1500 to the Lynn (Mass.) Hospital, and $400 each to the Boston Floating Hospital and the New England Peabody Home for Crippled Children.

The will of the late Mary Ann Smith, of Chelsea, Mass., who died on Sept. 9, was filed on Sept. 19, in the Suffolk probate court. It contains bequests of $500 each to the Rufus S. Frost General Hospital, Chelsea, and the New England Deaconess Hospital, Longwood. Both these institutions are also named as residuary legatees.

QUINCY HOSPITAL TRAINING SCHOOL.—The annual graduation exercises of the Quincy (Mass.) Hospital Training School for Nurses were held in that city on September 2. The principal addresses to the graduates were made by Dr. George W. Gay of Boston and by Dr. John A. Gordon of Quincy. Diplomas were awarded to four pupil candidates.

MEETING OF SOCIAL HYGIENE ORGANIZATIONS.—On Friday of next week, Oct. 8, will be held at the Copley-Plaza Hotel, Boston, the annual meeting of the American Social Hygiene Association in conjunction with the Massachusetts Society for Social Hygiene. The former organization was established in 1913 by the amalgamation of the American Federation for Sex Hygiene and the American Vigilance Association. The state society is an outgrowth of the former Massachusetts Society for Sex Education.

"The joint session will be held at the Copley-Plaza on Oct. 8. The morning session will be devoted to routine business, followed by luncheon; but at the afternoon and evening sessions, to which the public is invited, addresses on timely subjects will be treated from the moral and scientific point of view. Among those on the program at the afternoon session are Dr. John D. Trawick of Louisville and Dr. Rollin H. Stevens of Detroit, both of whom are city health officers; Dr. Thomas W. Salmon of New York City, secretary of the National Commission on Mental Hygiene; Dr. George A. Coler of Rochester, N. Y.; Dr. Allan J. McLaughlin of the Massachusetts State Board of Health; Samuel H. Adams of New York, one of those who carried on the American Medical Association propaganda against impure drugs and foods; Dr. S. S. Goldwater, health commissioner of New York; Dr. C. E. Banks of Washington, D. C., a Federal health officer; Dr. Edward L. Keyes, Jr., of New York; Dr. F. N. Whittier of Brunswick, Me.; and Dr. C. F. Dalton of Montpelier, Vt."

Dr. David L. Edsall of Boston will preside at the evening session.

Obituary.

SIR PETER EADE, M.D., LOND., F.R.C.P., LOND.

DR. SIR PETER EADE who died in Norwich, England, on August 12, was born at Acle, Norfolk, in 1825, the son of a local surgeon. He began the study of medicine as apprentice to his father, then in practice at Blofield and continued it under the eminent surgeon, Mr. John Greene Cross, F.R.S., at the Norfolk and Norwich Hospital. At the conclusion of his apprenticeship he entered Kings College, London, where he had a brilliant career as a medical student and graduated in 1847 with a gold medal and several prizes. He received the degree of M.D., in 1850.

Though offered an assistant surgeoncy in the Indian Medical Service, Dr. Eade preferred to settle in practice with his father. In 1856 he removed to Norwich where he was appointed to the Norfolk and Norwich Hospital in 1858. Here his service was that of both a physician and a surgeon, and in 1873 he was elected a fellow of the Royal College of Physicians. He was also consulting physician to the Norwich Public Dispensary, the Jenny Lind Infirmary for Sick

Children and the Children's Convalescent Home at Yarmouth. Upon his retirement in 1888 he was appointed consulting physician to the Norfolk and Norwich Hospital.

Dr. Eade was noted throughout his county and indeed through the whole of East Anglia as a consultant. He was the author of a history of the Norwich Hospital and of monographs on influenza, diphtheria, furunculosis, diabetes insipidus and the local use of cold in abdominal inflammation. In 1874 when the British Medical Association met at Norwich he was president of the section of medicine. Dr. Eade also devoted himself extensively to local improvements and municipal politics and was thrice mayor of his city. For his public services he received the honor of knighthood in 1875. His long and active life was typical of that of the best of the older time British provincial practitioners.

Two of his colleagues writing of him in the issue of the *British Medical Journal* for August 21, speak as follows of his personality:

"The death of Sir Peter Eade has robbed the profession of one of the most eminent physicians in the Eastern Counties, and the city of Norwich has lost a very distinguished citizen. He has left us at the mature age of 90 years with all his faculties unimpaired, and able to take a keen interest in the affairs of life to within a few days of his decease.

"Having been intimately connected with him for more than fifty years professionally and otherwise, I could but admire the energy he displayed in all he undertook and his patient attention to the smallest details. As a physician he was well known as a consultant of the best type, and when gradually withdrawing from his professional duties at the age when most are glad to retire altogether, he kept up his reading and took the greatest interest in all modern modes of treatment and ever interested himself in the welfare of the Norfolk and Norwich Hospital, with which he had been so long and honorably connected, and also in all the philanthropic movements in the city and the parish in which he lived.

"Of small stature and frail physique he was ever quick and active in his movements, with which the activity of his mind seemed to correspond. Although holding strong opinions on many subjects, he was most tolerant of those who differed from him, and generous and honorable in all his actions, with an extremely kindly disposition. He lived his long life amongst us gaining not only the esteem and admiration of all, but the affectionate regard of those who best knew him and with whom he was almost in daily contact.

"Sir Peter was vigorous in argument, taking a very strong line on his personal conviction, but he never was known to bear the slightest malice to his opponents five minutes after the most heated controversy. He was a staunch friend to many but an enemy to none. Honorable to a degree in all transactions, he would go out of his way to do a kind action for anybody requiring it. This I can testify to from personal experience. His purse was ever open to the poor of his parish, and they made free use of it. As a host he could not be excelled; his luncheons to the profession of the city and county, and his society dinners of twenty years ago were widely known and much appreciated. Sir Peter was genuinely loyal to all his colleagues, even at times under trying circumstances, and I cannot recall having ever heard his make an unkind remark about a member of the profession."

Miscellany.

MEDICAL CONDITIONS IN CHINA.

During the current year the Journal has had occasion several times to present material regarding various aspects of medical conditions in China. In the issue of the Journal for January 14 we commented editorially on Dr. Peabody's work with the Rockefeller Commission in making a medical survey of China, and on an article by Dr. William W. Cadbury of Canton in the *China Medical Journal* on medicine as practiced by the Chinese. In the issue of March 11 we presented a further editorial on the organization of the Hunan-Yale Medical School in China and on the new era which has recently developed in Chinese medical education. In the issue of March 25 we further quoted from a letter by Dr. Edward H. Hume descriptive of this school, and discussing particularly the work of the China medical commission of the Rockefeller Foundation. In the issue of the Journal for June 17 appeared an article by Dr. Reed on the prevalence of rabies in China. Compared with the stagnation of preceding centuries it appears that there has been a definite awakening of medical activities in China within recent years. The *British Medical Journal*, in its issue for June 19, presents the following editorial comment on the report of the China Medical Commission, a summary of which was published in the *Johns Hopkins Bulletin* for June.

"The commission, which was composed of President Judson of the University of Chicago, Mr. Roger S. Greene (American Consul at Hankow), and Dr. Francis W. Peabody of Boston, with Mr. George B. McKibbin as secretary, visited seventeen medical schools and ninety-seven hospitals in China and Manila. The commissioners state that the death-rate in China is probably higher than in any other country. The most widespread and destructive diseases are tuberculosis, hookworm disease, and syphilis. Leprosy is also common, and smallpox is looked upon as an inevitable incident of human life. There is no legal restriction on medical practice. The native materia medica mainly consists of

herbs, but modern 'patent' medicines command a large sale. The Chinese doctors know nothing of surgery; this is due to their ignorance of anatomy. Dissections and post-mortem examinations were not officially authorized till November 22nd, 1913 There are some Chinese physicians trained in Western medicine, but they practise mostly in the treaty ports or are attached to mission hospitals. The medical schools are classed in four categories: (1) Government and private schools; (2) missionary schools; (3) schools for Chinese women, and (4) non-missionary schools under foreign control. The strictly Chinese schools suffer from great disadvantages caused by disturbances of the political atmosphere during the last four years and the financial difficulties of the Government. Not one of them is properly equipped or adequately staffed, and not one has access to a satisfactory hospital. China has three hospitals for women alone, besides two in which they may be educated with men. But these schools are small and poorly equipped, and there is a difficulty in getting students who have had a proper preliminary training. The non-missionary schools under foreign control are five in number: Japanese in Mukden, German in Tsingtau (of this we suppose we may now say *fuit Ilium*) and Shanghai, French in Canton, and English in Hong Kong. The commission found that a study of hospitals in China 'resolves itself almost completely into a consideration of the mission hospital. The more important non-missionary hospitals established by foreigners are for the care of foreigners, and have no very definite influence on China itself. The hospitals under Chinese control, whether Government or private, are, with few exceptions, ineffective, and they are chiefly of interest as demonstrating how small an impression high-grade Western medicine has as yet made on China.' Among the recommendations of the commission are the following: 'That the Foundation should undertake medical work in China, and as far as possible should coöperate with existing missionary institutions.' 'That it is not advisable at this time to establish an independent institution for research, but that research be encouraged in connexion with the medical schools aided by the Foundation.' 'That the first medical educational work be in Peking in connexion with the Union Medical College, that a new school be established in Shanghai, and provisions be made for coöperating with existing schools in and near Shanghai in order to unify medical effort in the lower Yangtse Valley; and that assistance be given the Canton Christian College, and that the Yale Mission at Changsha be aided in its medical plans.' 'That two model tuberculosis hospitals be established.' The other recommendations refer to the foundation of fellowships and scholarships for Chinese students, the training of nurses, and the establishment of central diagnostic laboratories in Peking and Shanghai. They sketch out a broad scheme of medical education which has for its ultimate object a national system of public health administration. The commissioners insist that, if the scheme is to be successful, it is essential that a large number of natives of China should be thoroughly trained in the methods of Western medicine."

Correspondence.

MASSACHUSETTS DAIRY INDUSTRY.

CITY HALL, WEST NEWTON, Sept. 15, 1915.

Mr. Editor: Although much has been said and written about the decay of the Massachusetts dairy industry, the question is one of such vital importance that I am tempted to make a few observations based upon a recent inspection of a number of Massachusetts dairies. During the trip some 250 dairies situated in the northwestern and central part of the state and in the metropolitan district, all sending milk to the cities and towns in the district, were inspected.

I will not take the time to analyze the scores further than to say they ranged from 23 to 99 and that the further they are situated from the point of delivery the lower the score. Incidentally this holds good for other parts of New England, the out-of-state dairies averaging lower than those in Massachusetts.

I was impressed by the fact that there is no inducement for the farmer to produce high grade milk, for the man whose dairy scores over 80 receives the same price as the one who scores below 30, and the man whose milk has a high fat content is paid no more than one whose product just passes the standard.

Under Chap. 744 of the Acts of 1914 no dairy can send milk into any city or town in Massachusetts until it has been approved by the Board of Health of that city or town. This means that a dairy selling milk to a large contractor, who mixes his milk, must be inspected by every city and town in which that contractor delivers milk and must conform to the requirements of each: too often these requirements are very diverse and what will pass in Newton may fail to pass in Brookline, and both may be unacceptable to Boston. In any event the farmer must do certain things in order to have his product pass, and so his cost of production is increased.

On the other hand he is at the mercy of the large contractor for his market and as the price paid is practically based upon milk of the lowest grade, he must accept what is offered or lose his market.

At the time the inspection was made the contractor's price was $1.60 per 100 pounds but as there are certain deductions for cartage, etc., the net price averaged about $1.50 per 100 pounds or .033¢ per quart. It is true that there are premiums offered but as there seemed to be no check governing the payment of these premiums the result is that anyone whose conscience is a trifle dull can obtain the premium.

One practical result of all this is that the dairy herds are made up chiefly of cows which will give a large amount of low-grade milk and that many men who had Jerseys and Guernseys stated that they were going to dispose of them and replace them with other breeds giving milk with a smaller fat content.

Milk production is one of the few forms of business where a high grade product does not command a higher price than a poor one and it must be so from its very nature. The farmer must market his product at once for what he can get or lose it entirely and consequently must take what he is offered no matter if it is a loss. One man, in reply to a remark about the small number of cows in his herd, said, "Well, if I had more cows I'd lose more money."

There must be a remedy for such a condition and I believe it to be a very simple one. The farmer

should receive a better price for a better product but to do this the public must be willing to pay more for its milk. Let the milk be graded so that the consumer by paying a cent more per quart can have better milk.

It has been proved again and again that premiums to the producer, varying from one-eighth to one-fourth cent per quart for certain standards almost immediately produce those standards. Low bacterial count and high fat content should bring a higher price to the producer. We ask the farmer to do these things now, thus increasing his cost of production, but we refuse to pay him for doing them and naturally he objects.

Contrary to the usual belief it is not necessary to have a modern concrete barn to produce clean milk: such an equipment is to be desired but it does not necessarily produce clean milk. Methods count more than equipment and a careful man can produce milk in an old barn, with lower bacterial count than a careless man can produce in a concrete barn.

Let us bend our energies to obtaining a better price for the farmer for clean milk so that there will be an inducement for him to produce it and the result will be an almost immediate increase in the quality of our dairy milk and a gradual revival of the dairy industry in Massachusetts. This will give us a fresher and better supply for domestic use, as it will shut out the low grade milk from distant points; but we must be willing to pay for it.

As long as we object to paying a fair price for a good product so long shall we have low grade milk, brought from a distance, crowding Massachusetts milk from our markets.

Francis Geo. Curtis, M.D.,
Chairman, Newton Board of Health.

AN HISTORIC MEDICAL LANDMARK.

Cambridge, Mass., Sept. 16, 1915.

Mr. Editor: I have recently learned that there are plans on foot to demolish the house at Wellesley formerly occupied by Dr. Morton, who first publicly demonstrated the anesthetic effects of ether. The tract of land upon which the Morton house stands has been purchased from the Hunnewell family by Mr. Roger W. Babson of Wellesley Hills who is about to erect an apartment house there. To make way for the new building the Morton house must be torn down. It seems to me that this valuable historic landmark should be preserved. May I suggest that in view of the fact that the epoch-making demonstration of ether anesthesia took place at the Massachusetts General Hospital it would be peculiarly fitting that the Massachusetts Medical Society should take immediate steps to preserve Dr. Morton's house at Wellesley and place a suitable tablet upon it to commemorate its illustrious occupant?

I have talked with Mr. Babson and find that he is willing to delay the destruction of the building pending any action which the Society may see fit to take.

Very truly yours,
W. Stewart Whittemore, M.D.

AN EARLY MODERN REFERENCE TO THE WORK CURE.

Prouts Neck, Me., Sept. 17, 1915.

Mr. Editor: In Tolstoï's "Anna Karenina," which was first published in 1875, occurs the following: It is supposed that Levin, the speaker, was a faithful pen picture of the great author himself, as was David Copperfield, of Dickens.

Levin had been passing a strenuous day with his *muhziks*, mowing, much to his brother's amusement.

"The sight of his brother irresistibly filled him with happiness. 'Nu! what an appetite you have!' he added, as he saw his tanned, sunburned, glowing face and neck, as he bent over his plate.

"'Excellent. You can't imagine how this sort of thing drives all foolish thoughts out of one's head. I am going to enrich medicine with a new term, *arbeitskur* (labor cure).'

"'Nu, you don't seem to need it much, it seems to me.'"

"'Yes it is a sovereign specific against nervous troubles.'"

Very truly yours,
Wm. Pearce Coues, M.D.

DIAPHRAGMATIC PARALYSIS IN POLIOMYELITIS.

New York, Sept. 17, 1915.

Mr. Editor: In your issue of Sept. 16, 1915, an especially interesting article on poliomyelitis by Dr. Sylvester, states, in its chief title, "A Hitherto Unrecorded Involvement of the Left Diaphragm."

Dr. Sylvester has overlooked the literature of poliomyelitis, else he would have found this paralysis recorded. In Jelliffe and White's just issued Diseases of the Nervous System, p. 312, the facts of complete and unilateral involvement of the diaphragm are specifically stated and the literature there cited also speaks of these facts. I think your readers would care to have this correction, inasmuch as Dr. Sylvester makes specific claim to priority in discovery. I am unable offhand to tell who first described it, but I suspect, either Heine or Medin.

Very respectfully,
Smith Ely Jelliffe, M.D.

BELGIAN PHYSICIAN'S RELIEF FUND.

Report of the Treasurer of the Committee of American Physicians for the Aid of the Belgian Profession for the Week Ending Sept. 18, 1915.

Total receipts	$7814.84
Total disbursements	$7310.04
Balance	$ 504.80

F. F. Simpson, M.D., *Treasurer.*
7048 Jenkins Arcade Bldg.,
Pittsburg, Pa.

NOTICES.

Examination of Candidates for Assistant Surgeon.

United States Public Health Service.

Boards will be convened at the Bureau of Public Health Service, 3 B Street, S.E., Washington, D. C., and at the Marine Hospitals of Boston, Mass.; New York, N. Y.; Chicago, Ill.; St. Louis, Mo.; Louisville, Ky.; New Orleans, La., and San Francisco, Cal., on Monday, Nov. 1, 1915, at 10 o'clock A.M., for the purpose of examining candidates for admission to the grade of Assistant Surgeon in the Public Health Service.

Candidates must be between 23 and 32 years of age, graduates of a reputable medical college, and must furnish testimonials from two responsible persons as to their professional and moral character. Credit will be given in the examination for service in hospitals for the insane or experience in the detection of mental diseases. Candidates must have had one year's hospital experience or two years' professional work.

Candidates are required to certify that they believe

themselves free from any ailment which would disqualify them for service in any climate. Examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise covers the various branches of medicine, surgery, and hygiene.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order. They will receive early appointments. After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Passed assistant surgeons after twelve years' service are entitled to examination for promotion to the grade of surgeon.

Assistant surgeons receive $2000, passed assistant surgeons $2400, surgeons $3000, senior surgeons $3500, and assistant surgeon-generals $4000 a year. When quarters are not provided, commutation at the rate of $30, $40, and $50 a month, according to the grade, is allowed. All grades receive longevity pay, 10 per cent. in addition to the regular salary for every five years up to 40 per cent. after twenty years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For invitation to appear before the board of examiners, address

SURGEON-GENERAL, PUBLIC HEALTH SERVICE,
Washington, D. C.

COURSE FOR DENTAL NURSES.

The Forsyth Dental Infirmary for Children, Boston, is about to establish a course for Dental Nurses. The Massachusetts Dental Registration Law of 1915 permits the employment of dental hygienists in public institutions.

Candidates for entrance to the course must be 18 years of age, of good moral character, and must present certificates of graduation from high schools recognized by the College Entrance Examination Board or the equivalent of a four-years' high school course.

The course of study will be one year of twelve months. The instruction will be given in the Forsyth Dental Infirmary for Children. The fee will be $50.00.

An advanced course for Registered Medical Nurses will be offered. The course which will extend through a period of four months will deal with training in fundamental dental branches including practical technic. The fee will be $25.00.

For information apply to

HAROLD DEW. CROSS, D.M.D.,
No. 140 The Fenway, Boston, Mass.

APPOINTMENTS.

BOSTON HEALTH DEPARTMENT.—The following have been appointed to positions in the child hygiene division of Boston: *Dr. John S. Brownrigg, Dr. William J. McNally, Dr. Gaetano Praino, Dr. Henry F. R. Watts,* and *Dr. Charles F. Willinsky.*

CALIFORNIA STATE BOARD OF HEALTH.—*Dr. Wilbur F. Sawyer,* director of the California Hygienic Laboratory and lecturer on hygiene and preventive medicine at the University of California, has been appointed a member and secretary of the State Board of Health.

RECENT DEATHS.

DR. JOHN MERRICK BEMIS, a Fellow of The Massachusetts Medical Society, died at his home in Worcester, Mass., September 22, aged 55 years. He was a graduate of the University of Vermont College of Medicine and succeeded his father in the superintendency of the Herbert Hall Hospital in 1904.

DR. AMELIA BURROUGHS, who died at Boston on Sept. 25, was born in Omaha, Neb. She received the degree of M.D. in 1881 from the Homeopathic Hospital College, Cleveland. She was a member of the American Institute of Homeopathy and of the Massachusetts Homeopathic Medical Society.

DR. DEBORAH SMITH DRURY, who died on August 22, at Haverhill, Mass., was born at Andover in 1824. She received the degree of M.D. from the Women's Medical College of Pennsylvania, and during the Civil War practised her profession at Fall River, Mass. She subsequently removed to Boston and then to Haverhill. She is survived by one son.

DR. CHARLES EUGENE ESTABROOK, of Boston, who died recently of tuberculosis at Jacksonville, Fla., was a native of England. Coming to the United States in 1879, he graduated from the Harvard Dental School in 1883 and then studied medicine for three years. In 1887 he settled in the practice of dentistry in South Boston, but retired some years ago on account of ill health.

DR. DAVID HUNT, of Worcester, Mass., died of cerebral hemorrhage on September 15 in Detroit, Mich. He had been a practitioner in Boston and Worcester, making a specialty of ophthalmology and otology. He is survived by his widow and three daughters.

DR. JEAN PHILLIPPE ALPHONSE GARNEAU, who died on September 21 at Fall River, Mass., was born at Quebec in 1868. He studied medicine at Lavalle University, and since 1895 has practised his profession in Fall River. He was a member of the Fall River Medical Society. He is survived by his widow and three sons.

DR. ANDREW V. JOVA, who died recently at Newburgh, N. Y., was born in Cuba in 1859. He received his medical education at the College of Physicians and Surgeons in New York and had practised his profession at that city and Newburgh.

DR. WILLIAM F. MÜHLENBERG, who died on August 25, at Reading, Pa., was born in Gettysburg in 1853. He was for many years one of the leading general practitioners of eastern Pennsylvania.

DR. CHARLES E. NICHOLS, who died recently in Boston, was a native of this city. He received the degree of M.D. from the University of Vermont in 1868.

DR. JUSTIN N. ROGERS, of Patten, Me., who died on September 16, at Farmington, Me., was born in Monson in that state, in 1880. He had practised at Patten for several years. He is survived by his widow.

DR. ERASMUS D. SKINNER, who died at Minneola, Long Island, on September 20, was born at Greenport, L. I., in 1843, the son of a physician. He received the degree of M.D. in 1875 from the Berkshire Medical School. He is survived by his widow, one daughter, and two sons.

DR. HENRY STEARNS, of Concord, N. H., was killed in an automobile accident in Haverhill, N. H., on August 23. He was 45 years of age and had been a practitioner in Concord for nearly 15 years.

DR. JOHN E. SHEPPARD of Brooklyn, N. Y., who died of carcinoma on Sept. 13 at Putnam, Conn., was born in 1859. In his practice he had made a specialty in diseases of the eye, ear and nose. He was a member of the American Medical Association and of the Academy of Medicine. He is survived by his widow and by one child.